THE CONDOR

A Magazine of Western Ornithology

Volume XXXVI July-August, 1934 Number 4

COOPER ORNITHOLOGICAL CLUB

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A Magazine of Western Ornithology

Published Bi-monthly by the Cooper Ornithological Club

Entered as second-class matter May 15, 1925, at the post-office at Berkeley, California, under Act of Congress of February 28, 1925, Section 412, paragraph 4.

Issued from the Office of THE CONDOR, Museum of Vertebrate Zoology, Berkeley, California.

SUBSCRIPTION RATES

Three Dollars per Year in the United States, payable in advance.
Fifty Cents the single copy.
Three Dollars and Twenty-five Cents per Year in all other countries in the International Postal Union.

COOPER ORNITHOLOGICAL CLUB

Dues are payable in advance on January first for the calendar year: Three Dollars per year for members residing in the United States; Three Dollars and Twenty-five Cents in all other countries. Members whose dues are paid receive THE CONDOR without additional charge.

The Life Membership fee is Seventy-five Dollars. No additional dues are required, and the money is invested and the interest only is used for Club publications. Life Members receive The Condor without additional charge.

Send manuscripts for publication to the Editor, J. GRINNELL, Museum of Vertebrate Zoology, Berkeley, California, or to either of the Associate Editors, JEAN M. LINSDALE and ALDEN H. MILLER, same address.

Send dues and subscriptions to JOHN McB. ROBERTSON, Associate Business Manager, Buena Park, California; orders for back numbers of THE CONDOR and the PACIFIC COAST AVIFAUNA series to W. LEE CHAMBERS, Business Manager, 2068 Escarpa Drive, Eagle Rock, California

Issued July 16, 1934

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VOLUME XXXVI JULY-AUGUST, 1934 NUMBER 4

THE PRIMITIVE PERSISTS IN BIRD LIFE OF YELLOWSTONE PARK

WITH THREE ILLUSTRATIONS

By GEORGE M. WRIGHT

Days with the birds in Yellowstone are tonic to him whose spirit is bruised by reiteration of the lament that wilderness is a dying gladiator. Too frequent exposure to a belief born of despair is not good for any man. To conservation, it is a poison the more deadly because the injurious effects remain unnoticed until a lethal quantity has accumulated in the system.

There is an obvious prevalence of the conviction that perpetuation of primitive wild life anywhere on this continent is impossible in face of the expansion and intensification of European-type civilization. Neither is it to be denied that this particular defeatism has been a boon to the greedy one who would justify his seizure of the last egg or his eating of the last duck.

Honest recognition of all factors operating to destroy the wilderness and of the amount and rate of such destruction is nothing to decry. Propaganda from this source is salutary if accompanied by proper advertisement of the facts, and providing that it is presented as diagnosis with prescription for treatment and not intoned as a funeral oration.

The national parks and national monuments and certain designated areas within national forests have constituted the strong line of defense in the conscious determination to preserve representative examples of the primitive wild life of America. In the beginning we were blithely unaware of the complexities involved in this undertaking, unaware that Acts of Congress and ranger patrols were but preambles to the real task of keeping Nature natural. The first sharp pain of awakening inducted a sore travail, the taking of inventory to determine the adverse influences, their causes and their effects. From this labor a new principle was born. Henceforth, scientific, planned management would be used to perpetuate and restore primitive wild life conditions. The earlier protect-and-hands-off policy had abundantly shown it could not accomplish this objective alone and unaided.

Even before the birth, a spectral wolf haunted the scene. Ever bolder, his howls now make the night one long anxiety, for he shouts to heaven that the baby lives in vain. Small wonder if the nurses whose duty it is to appreciate every hazard over which their charge must triumph and to prepare him for it, now and

then grow discouraged. Their heavy task becomes quite unbearable with that added tribulation, the defeatist head-shaking of the spectral wolf.

Often it is but a small unnoticed shade of change which transforms the pleasant task into burdensome duty. I do not know when the change occurred, but there came a day when the elk bull standing on a much-too-near horizon was no longer the embodiment of wild beauty, no longer a wild animal at all to me, but just next winter's great big problem, a dejected dumb brute leaning on the feed ground, its gums aflame with foxtails and suffering from necrotic stomatitis.

It was the fear of fixation in this jaundiced outlook which first suggested a changed diet through study of the healthy elements in the picture instead of so much concentration on the bad spots. The refreshing mental exercise of analyzing observed incidents for their faithfulness to primitive life brought me to these reminiscences of a few among the many hours spent watching the lives of birds in Yellowstone.

The Yellowstone-Teton area, roughly speaking a plateau some one hundred and twenty miles long by sixty miles wide, of altitude varying from six to eight thousand feet, and encircled by mountains rising from three to six thousand feet above its plain, was one of the wildernesses late in yielding to man's violation. Though the three largest rivers of the country, first roads of exploration, clawed thirstingly at the flanks of the Gallatins, Absarokas, Wind Rivers, Hobacks, and Tetons, the ruggedness of these ranges and their long lingering snows discouraged all but the hardiest scouts such as John Colter and Jim Bridger.

In the course of time even this land was called upon to yield much from its rich stores of game and fur. The trappers who went in came out laden, yet they told little, as it was not their way incautiously to brag about the best trapping grounds. The game beyond the mountains was nearly annihilated, and much of this was the same game that had summered in luxury on the abundant grasses of the plateau. Then the dude explorers and hunters—"Muggses", they were called in their day—came to take a share. Protection was only a name in the first years after the park was set aside, and very probably less than that insofar as the game was concerned. Finally, the automobiles, shrieking over fast roads, brought thousands of well-meaning but thoughtless visitors whose very presence would seem paradoxical to the concept of wilderness.

In spite of all these vicissitudes, each one of them a fearful impact on the primitive, today the beavers are back by the hundreds, content in the freedom to pursue their inherent way of life, without ever a lurking fear that they might be born to ride to the Paris opera astride some dandy's eyebrows as did their beaver forefathers not so many beaver generations gone by. Down in the Bechler swamps, the lone Loon is as solitary as the poet's version would be pleased to have it. Shiras moose thresh the willows in Willow Park, their behavior so naturally easy that the wide-eyed tourist might well wonder if it is not himself who is exotic in these surroundings and therefore the curious object. While watching a marten in the woods of Heart River, a coyote amongst the ghost trees of Middle Geyser Basin, a badger on the boulder-strewn hills of Lamar Valley, I have sometimes felt almost offended by the suspiciously elaborate disregard of my presence manifest in their behavior.

But it is the birds of the water, beautifully wild birds by the thousand, that are encouragement and inspiration to the man who prays for conviction that the wilderness still lives, will always live. The shimmering silver sweep of the many lakes large and small, and the calm yellow-brown expanse of the broad, warm rivers harbor a varied and abundant bird populace. Trumpeter Swan, Sandhill Crane,

White Pelican, Canada Goose, American Merganser, Mallard, Barrow Goldeneye, California Gull, and Osprey are outstanding in the picture, some because they are large birds, others because there are so many of them. In the case of the Canada Goose it is both. Double-crested Cormorant, Caspian Tern, Loon, Harlequin Duck,

Fig. 24. Canada Greese frequent the roadside meadows—often, as if no road were there. Wild Life Division negative, no. 385.

Willet, Avocet, Solitary Sandpiper, Shoveller, Sora Rail, Great Blue Heron, and others earn distinction on a day's list because they are either rare or rarely seen. And the red-letter, Wood Ibis day may not repeat itself in one person's experience. Other birds of more usual occurrence are Coot (myriads of these), Ruddy Duck, Pintail, Green-winged Teal, Blue-winged Teal, Scaup, Eared Grebe, Pied-billed Grebe, Buffle-head, Red-winged Blackbird, Yellow-headed Blackbird, Belted Kingfisher, Western Yellow-throat, Tule Wren, Wilson Snipe, Wilson Phalarope, and the inland waters' constant companions, Dipper, Killdeer, and Spotted Sandpiper; and beyond all these, fully again as many more.

The concentration of so many waterfowl so high in the mountains is in itself an amazing thing. The readily apparent cause of this unusual spectacle is the abundance of warm shallow waters in both the streams and lakes which favor production of the preferred foods.

Sometimes while I am watching these birds on the water, the illusion of the untouchability of this wilderness becomes so strong that it is stronger than reality, and the polished roadway becomes the illusion, the mirage that has no substance. The impression of the persistence of the primitive is strongest in those exciting minutes when the birds are observed struggling to outwit their natural enemies or in a competition against one another, themselves oblivious to all but the primeval urge of the moment.

The notebook records many interesting incidents in the natural lives of Yellowstone birds, some of them particularly suggestive of the theory that animals hew closely to the way of life peculiar to their species, ignoring man-made changes in their environment so long as these do not constitute insuperable obstacles demanding deflection of habit.

Among Yellowstone birds, the Sandhill Crane is reputedly the wariest. Its bearing is always patrician. For all that the Swan is a tradition of grace and dignity, still the familiarity that breeds contempt brings a day when one is close to confessing

Fig. 25. Nest of the Sandhill Crane as seen at the edge of a lost lily pad lake in Bechler River district, Yellowstone. Wild Life Division negative, no. 2311.

this bird's kinship to certain inmates of Si Farmer's duckpond. The Sandhill Crane never gives a chance for familiarity. In its aloofness there seems to be more than fear. A first acquaintance made in 1930 left an impression that subsequent events have failed to erase. It seemed as if the cranes eschewed close association of any sort with the whites who had come to trespass upon their chosen solitude. Only with the dire need to protect their young did the barrier break down.

In early June, 1931, we stood on the edge of a lost lily-pad lake in the Bechler River district. The gleam of sunlight on a rusty red head pressed closely down revealed a sitting crane. Though we halted in our tracks and made no movement, she could not endure our presence for more than a couple of minutes. I could not tell afterwards how she rose from the nest, but there she went, crossing the lake with slow, sweeping, steady wingbeats, uttering that strange unearthly call which is the very embodiment of all wildernesses. Slowly she lifted, gaining just enough altitude by the time she reached the lake's far shore to clear the lodgepoles and disappear from our view. There were two eggs well advanced in incubation on the flat raft of tule stems.

In 1932, this time on the last day of July, while we were riding across a wet meadow near Tern Lake, two Sandhill Cranes permitted us to come much closer than usual. The explanation was right under foot. Our horses jumped aside as a half-grown baby exploded from the young lodgepoles and went careening out across the uneven ground. We tried to run down this grayish-pink fledgling, but our horses were at a disadvantage, and once it reached the forest on the other side our quarry disappeared like magic. The one parent that remained on the scene flew from one hillock to another in silence. In alighting it would come in on a long slant, lightly touch its feet to earth in twelve to fifteen giant paces, and finally come to rest with wings folded.

We had always maintained that this was one bird which would never consent to abide with man, but the summer of 1933 proved us wrong. All through the season, two pairs of cranes, each with a single young, fed unperturbedly in the meadows north of Fountain Geyser in full view of the constant procession of cars. On September 13, when last observed, the youngsters equalled their parents for size, though readily distinguishable by the reddish-brown streakiness of their bodies and the lack of color in the head markings. That same day we located a third family with two

juveniles not more than a mile airline from the other two. It was a gala day indeed, for we felt that it marked Yellowstone's high achievement in perpetuating the primitive in the presence of man.

An early morning in June found us driving from Canyon to Lake, a route which is always interesting because it never fails to reveal a fascinating wild life panorama. Where the road closely parallels the Yellowstone River, two American Mergansers were acting strangely. Both wore the gaudy trappings that proclaimed their maleness to the whole world. The foreparts of one Merganser were thrust under water. Its tail was elevated, and the wings were slightly spread as with some extraordinary effort. The other Merganser fussed alongside. Presently the struggles of the first ceased, and both of them began to circle excitedly around and around over the spot. A California Gull came out of the nowhere, swooping past with a ghoulish cry. Back again it swung, then most unexpectedly departed in screaming, precipitate retreat. Before we could cogitate the unorthodoxy of such an un-gull-like act, the Mergansers, too, were lost to sight under the spread of a white fantail and the beating of broad dark wings. From a sparkle of spray, a Bald Eagle rose with one ten-inch native trout. And now the story was plain. The Mergansers had tackled a trout too big to be managed. The Gull foraging up the river sensed the possibility of a steal, only a few seconds before the swift approach of the Eagle changed lust to fear. There we were, all of us, too much startled by the sudden dive of the great bird to do much of anything at all. With measured strokes the monarch winged away toward the distant wooded bench where it is rumored that it occupies the same nest from year to year.

A pair of Harlequin Ducks dropping down through the fast water below the Cascades was the second touch of the unexpected. In the bright morning light, the rich red side of the male was the conspicuous identifying mark, the more bizarre paintings on head and neck not being revealed at a distance.

In a marshy expanse of the river not far from Mud Volcano, a pair of Trumpeter Swans were quietly feeding, and when we returned that way late in the afternoon, they were still there, a picture of perfect repose in the soft caress of the setting sun. Though we never left the car in making these observations, what we saw was all wilderness life.

The story of the White Pelican is a sorry one the country over. California, for instance, which once had at least nine colonies and two years ago could still boast one, may be without any in 1934, since the large colony at Clear Lake failed to produce anything last summer. But the wilderness of the Yellowstone fights to protect its own.

The presence of White Pelicans on Yellowstone Lake has been continuously recorded for over fifty years, and it is safe to assume that they have bred there for a long, long time. Rumors, probably well-founded since the antipathy of fishermen against all the fish-eating birds and mammals is well known, tell of numerous raids on the breeding islands, and the control experiments which were officially sanctioned are a matter of record. Today the fish-predators in national parks have equal rights with all other classes of animals. There is written into the Park Service code for wild life the following policy:

> "Species predatory upon fish shall be allowed to continue in normal numbers and to share normally in the benefits of fish culture."

In spite of the pressure to destroy the primitive which was brought to bear before this permanent peace was signed, the colony seems to have maintained a fairly constant status throughout. Each year has revealed the same sort of domestic activity down on the island nursery.

The general sequence of events, together with species noted and the numbers of each, have all been so constant for each of the trips we have made, that the chronicle of any one of these excursions will do as a pattern of the rest. This particular trip took place on June 4, 1932.

The Bureau of Fisheries' boat makes a broad furrow for eighteen miles up the lake before the tiny Molly Islands at the head of the southeast arm are sighted. A hazy cloud of Gulls first marks the spot for us. Then a half hundred Pelicans rise up among them. For a few minutes they whirl about in disorder, then organize the flying march which takes them over to a sandspit on the mainland where they alight and remain, still in the order of march, at rest but watchful. While the boat is still a hundred yards off shore, two Double-crested Cormorants shoot out across the water straight and low like two torpedoes leaving a destroyer. At the same instant the calls of startled Canada Geese come to us from the far side of the islands. Later someone spies the Geese heading for the marshes at the river mouth.

While we are coming to anchor and casting off the rowboat, the cloud of Gulls thickens and their protests shatter the calm. Among them are two Caspian Terns, but they are not so fearless as the Gulls, and soon are lost from the picture. Not

Fig. 26. Far down in the southeast arm of Yellowstone Lake the two tiny, Pelican islands lie. Not until our boat scrapes on the pebbles do the sitting Pelicans decide to abandon their nests. Wild Life Division negative, no. 2466.

until our boat scrapes on the pebbles do the sitting Pelicans decide to abandon their nests to the enemy. We scramble to high ground in time to see the last reluctant three take to the air.

The Caspian Terns are presumed to be breeders, but this year as before we fail to find their nest among the five hundred and sixty-four which we count as belonging to the California Gulls. We find the single Farallon Cormorant nest with three eggs. The Cormorant population seems to remain constant at one pair. The nine goose nests on the two islands contain a total of nineteen eggs, five being the largest number in one nest. There are one hundred and twenty-six occupied Pelican nests, and two hundred and thirty-two eggs. Three nests contain four eggs each. Two Western Willets, a few Wilson Phalaropes, and the usual complement of Spotted Sandpipers complete the Molly Island census for the day. We hunt in vain for a Blue-winged Teal nest, remembering well the one we found on Pelican Island in 1930.

The year 1932 marked a milestone in the Yellowstone White Pelican saga. That year, respect for the Pelicans reached the point where the superintendent of the park issued an order prohibiting all boats from even passing close to Molly Island during the nesting season, the only exceptions to be two or three ranger-conducted surveys for census purposes. Persistence of the primitive in the face of much interference has won its reward, another victory for wilderness.

There is an aura of wildness about the cluster of lakes deep in the wooded heart of Mirror Plateau which stills the voice and quickens the senses. From the first, our experiences in this territory taught us to watch for the unexpected. The trip of June, 1932, yielded no particular excitement until the moment of our departure on the morning of the 25th. We walked up the crest of the hill on the west side of Tern Lake where we could get a good, though somewhat distant, view of the Trumpeter Swan nest that we had been studying. Both parent birds were out of sight, so we started on. At the last opening in the trees we hesitated for the fateful last look.

A black object loomed by the swan nest. With field glasses glued to our eyes, we saw that it was an otter stretching its full length upward to peer down into the nest. From one side it reached out toward the center and pushed aside the material covering the eggs. Then the commotion started. With rapt interest, the otter rooted around in the dry nest material, heaving up here and digging in there, until it was more haystack than nest. Then the otter started to roll, around and around, over and over. This went on for a number of minutes. At frequent intervals its long neck was craned upward, and the serpent-like head rotated around to discover (we supposed) if the Swans were returning. At last the otter seemed to weary of this play. It climbed from the nest to the outer edge, then slid off into the water. Swimming off along the edge of the marsh grass, it was the undulating silver demon of the water world. Once it dove and several times detoured into channels through the grass, only to come right out again and continue on. It never turned back, and was finally lost to sight.

Where were the Swans all the while we had been praying for their return? We well remembered that time two years ago when they came flying in from a far corner of the lake to drive off a Raven which had already broken one egg. Careful search with the glasses revealed the parents, all that we could see being the water-stained heads and black bills protruding from the marsh grass. One was about six hundred feet from the nest, the other not more than two hundred and forty feet. Yet both birds gave no evidence of concern. Seeing that the damage was already done, and another year's potential Swan crop for the Mirror Plateau lost irrevocably, we saw no further reason for caution. So we stripped off our clothes and waded out across the shallows. We were amazed to find all five eggs intact. There they were, all together, rolled to one side but perfectly whole. So much for circumstantial evidence. Had we gone on, Mr. Otter would have had one order of scrambled Trumpeter Swan eggs charged on his bill.

We covered the eggs and hurried away in confusion as huge hailstones pelted our bodies. We hoped that the parents would return to protect the eggs from chill. The storm obscured the scene, obliterating the next chapter in the story. Later we learned from the ranger reports that no cygnets were raised on Tern Lake that year. Which meddler should shoulder the blame, the otter or the scientist?

Mirror Plateau has been made a research reserve. The only trails leading in are elk trails. No developed trails will ever find a place there, and of course no roads. Since no trout are ever to be planted in these lakes, there is every reason to hope that here again the fugitive wilderness has found another safe retreat.

The Mirror Plateau, however, like Molly Islands, is a special case. Here man has shut himself out to protect the wilderness. We seek to retell those occurrences when it seems that the wilderness has persisted in its primitive characteristics in spite of artificial developments.

We stood on the road the cold morning of November 10, 1932, watching the sun lift the veil of mist from the meadows at the head of the Madison. Wildfowl floated on the river with that economy of movement so characteristic of wild creatures in cold weather. Men stamp their feet and blow in their hands, but the animals and birds seem to conserve their body warmth to best advantage by staying very still.

The Bald Eagle usually present in this section in winter made its rounds and disappeared in the direction of the Firehole. A coyote sat out in full view in the middle of the snow-white meadow with a cocky mien which seemed to say that it had done enough mischief of a serious sort during the night and now awaited something to arouse its curiosity. Of course no good scientist would be guilty of even toying with the fancy that a coyote could be suspected of thinking at all. Oblivious to such insult, the coyote presently came trotting toward the river bank and proceeded to go on a still-hunt for birds. He worked down stream, keeping back out of sight except where a break in the bank or some protective cover permitted him to come down to the water's edge. When five Canada Geese near the opposite shore caught sight of the enemy they kicked into the air and flew off calling loudly. They broke the sweet silent spell. Mallards and American Mergansers seemed aware that their position was impregnable and paid no attention. Nine Mallards swam down stream right past the coyote, which by now was openly eyeing them from the bank. The coyote turned its attention to hunting small rodents in the meadow, and we started up the road. A single Clark Nutcracker crossed in front of us.

The road up to Old Faithful closely parallels Firehole River. Numbers of Dippers breed here in summer, but in winter there is a much greater concentration on this and the other warm streams. But where were the Dippers this morning? Finally we found them. We had been searching their accustomed rocks, but these were ice-covered now, and the birds had therefore abandoned them for the winter to stand quietly on the submerged rocks, their legs warmed by the friendly river.

The elk, too, take advantage of the thermal heat. We saw many of them in the upper Geyser Basin and knew that some would remain there for the winter, loafing on the warm ground, which is always free enough of snow to provide some forage. At that, they fare better than the bulk of their fellows who join the migration. It is generally recognized today that the elk wintering up on the plateau usually come through in good condition, whereas those on dole at the feed grounds are emaciated by spring. Wild game prospers more if permitted to remain primitive. The mere presence of man is not so injurious. It is when he attempts to have the animals live his way and die his way that ruin follows.

Canyon, for example, is one of the human concentration points in the park. Before visitors came to this place, it was a concentration point for Ospreys, and there is no evidence that civilization has diminished their numbers. Throughout the summers of many centuries they have raised their young on pinnacle nests in Yellowstone Canyon. Crowds of eager-eyed tourists on the parapets, which in some instances are almost directly over the nests, do not disturb the sitting birds.

Notes taken on the mild cloudy day of May 20, 1932, read as follows:

Osprey. From the lookout point at the end of the Canyon Drive on the north rim, we were able to count seven nests on which Ospreys were sitting. Ospreys wheeled in the higher air and floated in the canyon. Ospreys sat on their nests and

called, like giant young chicks, when their mates came near. Ospreys came in with their catches of trout. Yellowstone Canyon belongs to the Ospreys. People build roads back of the rim, railings over the steep points, and trails down to the river, but the canyon really belongs to the Ospreys. They alone are equipped to be at home in this rugged brilliant gorge.

A Raven, too, has its nest just under the rim of the south wall, but its life is made miserable. An Osprey chased the thievish Raven for a quarter of a mile down the canyon while we lunched and meditated upon a wonderful nature.

The Ospreys of Yellowstone Falls are evidence that even a very highly specialized and locally restricted form can persist in the full vigor of the primitive in very close contact with man. Lately the Sandhill Crane has shown ability to do the same thing. The White Pelican has done it, as has the beaver and the moose, the Canada Goose, and many others. When I see how many of the wild creatures can re-assert their wild way of life upon the exercise of a very little restraint on man's part, I am encouraged to laugh once more at the defeatists and tackle afresh the problems of wild life restoration.

Though these reminiscenses of field days were encouraged for the purposes of strengthening a slightly damaged optimism personally, and rebutting the despair chorus generally, they have engendered a new line of thought. This is that a useful technique for solving wild life problems may develop from a study of the inherent tendencies in all species to remain primitive. Since their primitive living pattern must represent the most beneficial one for them, we may hope through analysis and understanding of its method to improve management practice. More of the wild animal background should enter into wild life administration to the exclusion of ideas rooted in centuries of association with domestic live-stock.

National Park Service, Berkeley, California, April 19, 1934.

A WILDERNESS-USE TECHNIQUE

WITH ONE ILLUSTRATION

By BEN H. THOMPSON

In northwestern Wyoming is a land guarded by mountains. It is a wilderness of forest, swamps, and lakes, broken by cliffs and lofty granite spires, and chiseled by crackling ice and the sunny dripping of water. Long river tentacles reach up to this high plateau from different oceans. In winter it is a land of heavy snow and sweeping sleet, and sometimes the night is whiter than day. Then the elk herds drift down from the sage and aspen valleys where the rivers go to warmer levels. The weasels turn white with little black tips, and the snowshoe rabbits have black-edged ears above muffed feet. Sometimes a Great Gray Owl comes softly out of a wet sky. In spring it is a land of mist-blue forests and sparkling lakes. Then summer haze begins to rise from the forest and makes the great mountains look like bluer shadows in a blue sky. Ocean birds come sailing in to nest in unseen swamps. There is the mute whistle of ducks, the call of geese, and the "weer" cry of gulls. The marsh grass grows in seeping ground and the forest blooms; the pond lilies push their soft yellow lamps above water, and sage and lupine bask in the sun.

Into this land people go for the love of it and to learn its ways. To save this wilderness just as it was "for the benefit and enjoyment of the people", a portion of it was established as Yellowstone National Park.

Here is a thing so glorious that it threatens to be impossible. How can the secret beauty of wilderness be opened to the people and remain unspoiled? This

is the greatest question we have to meet if we are to save this and every other national park as a truly primitive area. At once, we are faced with the thing so aptly expressed by Leopold (Journ. Forestry, 32, 1934, pp. 537-544):

> The salient geographic character of out-door recreation, to my mind, is that recreational use is self-destructive. The more people are concentrated on a given area, the less is the chance of their finding what they seek.

It seems that what we most need is the technique of using a wilderness without spoiling it. Roads and living accommodations have been constructed in these wilderness places to make them habitable for man. Roads have cut through forests and hills, have bridged rivers and marshes, have clean-cut the feathery margins of lakes. Buildings, erupting from the age blended scene, have been set up in the midst of sacred areas. This has all been perceived years ago, and a remarkable technique has since been developing to blend buildings, roads, and bridges with the scene and to save sacred areas from all development. But the main problem still confronts us: to preserve the wilderness character of humanly utilized wilderness.

A step so simple as to be almost overlooked, yet perhaps far-reaching in its implications, has been made.

An old road in Yellowstone is to be improved and partly relocated. Near the brink of the Lamar River in northeastern Yellowstone, in the direct route of the

Fig. 27. The Lake.

new road, a small lake spreads between low glacial mounds. At evening, the mirrored hills and sky take on a shining luster within the margin of the lake. The picture looks so quiet, but from the tules around its edge comes a medley of squalls, chucks, squeaks and ratchety sounds. From time to time the chorus rises, as two waterfowl with slapping feet and wings, run across the water, shattering its picture into a thousand disconnected pieces. Then small dusky creatures bob again back to the tules and the picture draws its shining self together once more.

The lake is not spectacular nor famed for its beauty. It is simply one of many

lakes in the region where wild fowl nest and wild animals come timidly to drink. But the question arose—and this is perhaps the germ of a new technique—whether the proposed road should girdle the lake or stay entirely away from it to avoid disturbance of the nesting waterfowl. In other words, was the wild life of this lake important enough to man, for aesthetic recreation, to induce him to change the course of a proposed highway? The question naturally hinged on the extent and variety of waterfowl utilization of the lake. Observations made at the lake over a period of years have disclosed the following:

Pied-billed Grebes, not known in the park before, have in recent years been found nesting among the tules in this lake. Here they glean the mud-gray tule stems from the lake bottom and construct their barely floating nests. Each nest is hardly more discernible than a shadow on the water and can easily be mistaken for a tiny mass of half sunken débris. But neatly hidden beneath a few wet-clinging tule stems, rest the several roundish white eggs, sheltered from the sun and possible enemies while the nesting bird feeds out in the lake. One swampy afternoon a sharp and sudden hailstorm broke over the lake, pelted its glossy surface into bobbing chessmen and wilted the bird songs in the tules. With the first great drops of the shower, the silent snake-like head of the Grebe suddenly rose in the water beside the nest, the bird crawled onto her nest, carefully nosed the covering back and settled herself on the eggs while the hail drops rolled from her back.

Some days later two little downy Grebes were found swimming among the tules. They were captured, photographed, released. No sooner than the intruders' departure, four loudly cawing Ravens swooped on the lake, flew away with one of the baby Grebes, and the other one was never again seen. So much for the good intentions of man in the Grebe's precarious haunt!

Almost certainly, these timid, elusive birds would not frequent the lake if the road were built by its brink.

Year after year a pair of Trumpeter Swans returns with the lengthening days of April to rebuild their huge floating nest of dry tule stems. More like a haycock it looks as it floats nakedly on the lake in early spring. By the time the downy white cygnets hatch, after forty days of hazardous incubation, green tules screen the nest and birds from the lake shore. So wary are these great white birds that they are easily frightened from the nest. At such times—in other nests—Ravens have been known to break the eggs, and an otter has been watched as it rolled in the nest and tore it to pieces. In spite of such vicissitudes, this pair of Trumpeter Swans has raised to maturity six young Swans during the last three years. There are probably fewer than a hundred Trumpeter Swans left in the United States. This little lake is of vital importance to the species.

Common Canada Geese frequent the lake, although no nests have been found. Common Mallards nest at the lake each year and usually may be seen with their shuttling ducklings, foraging somewhere in the tules. Pintails, Scaups, and Barrow Golden-eyes glean the marshes day after day, and Ruddy Ducks court and fight like pirates.

Each year, after long search, the shadowy form of the little Sora is seen as it creeps through the whispering marsh-tangle. And just as often, the Spotted Sandpiper flickers from bank to bank to lead you from its nest. Two Killdeers nest near the muskrat's house, their plaintive cries convincing you that two fuzzy babies are crouched near you—perhaps in a buffalo track. The inexorable Coots fight and squawk day and night. Their clumsy nests, built like fire houses, with driveway from nest floor to water, encircle the lake. Prolific, they people the marsh with innumerable

black babies. At least three pairs of Wilson Phalaropes have nested at the lake in one year. They are the most evasive of all the lake inhabitants.

Yellow-headed Blackbirds outnumber them all. Like a yellow-vested orchestra, they maintain the din and the clatter. Forty-three of their nests were found at the lake one summer. Of these, thirty-three were empty. Of the remainder, only three contained four eggs each when the census was taken. Their rate of reproduction at this particular lake cannot be great. Three pairs of Red-winged Blackbirds nested at the lake the same year. Their nests were destroyed by some unknown factor before the eggs hatched. But each year the red-wings return. Nevada Savannah Sparrows and Lincoln Sparrows nest in the grass by the lakeshore. Rock Wrens and Yellow-throats sing from the surrounding hillsides.

A total of seventy-three nests was found at the lake one year. This may seem an amazing number for so small a community but it is probably representative of many similar marsh-lakes in the park.

There seems to be a neat signal code between birds and mammals of the lake region. No matter how stealthily the lake is stalked, one's "secret" approach is usually heralded by the snort of an antelope, the whistle of a marmot, the squeak of a ground squirrel. After much foolish labor one peers cautiously over the last hillcrest to find every bird in the lake alert for danger. What the effect would be of highway traffic thrust into such a delicately poised protective system can only be conjectured, but it would probably deaden its efficiency.

Thus we briefly sketch the lake's Bluebook. Only the birds which are most confined to the lake habitat have been mentioned. A host of others is wrapped in the lake's ecologic community. They, too, add to the recreational values but are not directly connected with the problem under consideration.

Since the lake is neither spectacular nor uncommon—is not one of the outstanding manifestations of primitive nature—should so much consideration be given to it? Why not follow the already surveyed course of the proposed road?

National parks are created where the outstanding examples of primitive nature are to be found. Roads and accomodations are constructed in them to make them available to the people—so far, so good. But when we come to make the *wilderness itself* available to the people, we must first arrive at some idea of that which we seek, then develop the technique for accomplishing our goal. As far as wild life in the wilderness is concerned, perhaps the greatest spectacle is not a flock of thousands of birds on a baited sanctuary, but the one mother Grebe covering her nest while the hail drops rolled from her back. We cannot build highways to see these things. We can build highways to bring people near enough that they can see these things by exerting a moderate amount of their own individual energy and ingenuity.

Applying this thought to the lake and proposed highway, we would be more apt to attain the thing we seek if we kept this little lake away from the road, where those may go who care to—and there is no need to make it available to any others—and be quietly with the birds which live there.

Birds are seen constantly along roadsides in the park, as portrayed in the companion article by George M. Wright. Furthermore, as he has suggested, wild life tends to cleave as closely as possible to its natural mode of living where the innovations of man do not actually force it out of its normal habitat. Even such disruptive events as the construction and utilization of modern highways in Yellowstone leave the major portion of the native bird life apparently undisturbed. In other words, the breaks are all with us.

It may be that the disrupting effect of a modern highway in a wilderness is more

psychological than zoological. If such is the case, it is worth considering, too. But in the particular case of this little lake and the proposed highway, there is grave doubt that a lake-shore highway would be of any benefit to either the nesting Swans or Grebes, and might result in the loss of several other species at the lake, even though there would still be enough birds left to present an interesting primitive spectacle from the road.

These factors were considered, primarily as affecting the Trumpeter Swans but also as affecting some of the other nesting birds of the lake. An order was issued that the road should not follow the lake shore.

This perhaps seems like "much ado". Nevertheless, it is an advancement in the technique of utilizing the wilderness and still preserving it. What will the future of such a technique be? I am tempted to speculate.

It will depend in great measure upon the things we learn about the life history of animals. Based upon these findings, accomodations for human convenience must be so constructed that they will exert a minimum of intrusion. Otherwise, man loses the thing he seeks. It will depend upon the effects of roadways, trails, sanitation, road-side clean-up, and other things, as they affect plant and animal communities, soil, water percolation, etc. It will depend upon the effect of man's presence in large numbers in the wilderness. The accumulation of such knowledge may result in the restoration of much larger tracts of untouched wilderness than we have now. It may result in a greater concentration of development areas than we now have, with perhaps certain lines of development abandoned. Undoubtedly the future generations will be more adept in the art of this technique than the present, and they will be grateful for large tracts of wilderness wherein they may develop new values which our present limited technique has left untouched.

From the psychological angle we have equally as much to learn. It is enough to suggest that perhaps a certain minimum area of undeveloped wilderness may be found necessary for the aesthetic recreation of the individual; that a certain width and type of road may not be exceeded without suffering definite loss of wilderness character along its course; that beyond a certain degree in refinement of roads and living accomodations we are as effectively removed from being in the wilderness as though a glass inclosed us; that guided trips and excursions must be limited to certain numbers of participants, beyond which we face the law of diminishing returns in wilderness enjoyment.

At any rate, the decision at the lake was an indication of the growth of a wilderness-use technique in the national parks—an attempt to keep these places as they were when the fur-trappers first explored them, and yet to open their treasures to all people.

Wild Life Division, National Park Service, Berkeley, California, May 19, 1934.

CHARACTERS DIFFERENTIATING CERTAIN SPECIES OF STERCORARIUS

By GEORGE WILLETT and HILDEGARDE HOWARD

Though it is often more or less difficult to separate races of the same species, it is generally rather easy to distinguish birds that differ specifically. One of the exceptions to this rule appears to be furnished by the Parasitic and Long-tailed jaegers. That these two birds are specifically distinct there can be little question. Insofar as the writers are aware, there have been no recorded instances of either intergradation or hybridization between them. However, a careful study of available material has shown that none of the characters hitherto stated to differentiate between these two birds is one hundred per cent diagnostic. Adult birds in breeding plumage are easily distinguished, though even in some of these, features attributed to them in various keys are not constant. Fall and winter adults and sub-adults and, particularly, juvenals and second year birds are much more difficult to segregate. In studying material of the latter class, it is found that keys generally used are not easy to follow, for the reason that they are properly applicable only to adult birds. Therefore it is very probable that many collections contain juvenile specimens that are wrongly identified.

The principal characters that have been used in separating *Stercorarius parasiticus* and *S. longicaudus* are size, length and width of central tail feathers, comparative length of supra-nasal saddle and unguis, width of bill, color of tarsi, and color of shafts of outer primaries. In adult and sub-adult specimens examined by the writers (twenty-two in number) only one of these characters, the color of the tarsi, holds throughout the series. The length of the central tail feathers proves diagnostic in all summer adults except one, a male *parasiticus* (L. B. Bishop coll., no. 43814), which has central tail feathers 239 millimeters long, just within the range of *longicaudus* as given by Ridgway in his Birds of North and Middle America. The length of these feathers is of little value in separating winter adults or immature birds. Their width also varies considerably with degree of molt and wear.

Most specimens of *parasiticus* with unmolted primaries show white shafts on the three outer ones, the majority of *longicaudus* having shafts of this color on only two. However, two young specimens of *parasiticus* in Dr. Bishop's collection, both possessing black tarsi, display white shafts on only two primaries, and in two adult *longicaudus* in the Los Angeles Museum collection the third primary shaft is almost as white as the two outer ones. The color of the tarsi, as before stated, appears to be truly a diagnostic character in adult and sub-adult birds, being black in *parasiticus* and blue in *longicaudus*, but, as one of us has pointed out (Willett, Pac. Coast Avif., no. 21, 1933, p. 72), this does not hold during juvenility. Another color character that is suggested in the two available juvenile specimens of *longicaudus* is the generally black and white effect of the under parts, particularly the flanks and lower tail coverts, the rusty tone of coloration present in comparable specimens of *parasiticus* being absent. Study of a sufficient series of specimens, however, may show this character to be valueless. The generally larger size of *parasiticus* is indisputable, but here again, there are exceptions which, if judged on size alone, as determined externally, might be assigned to either race with equal propriety.

Coming now to the bill measurements of the two species. The differentiating character most frequently used is the comparative length of the supra-nasal saddle, or cere, and the unguis. Ridgway (Birds of N. and Mid. Amer., 8, 1919, p. 687) and Stejneger (Bull. U. S. Nat. Mus., 29, 1885, p. 88) give slightly varying methods of computing this difference, the former measuring the unguis from the anterior tip

of the cere, and the latter from the anterior border of the nostrils. Neither of these writers states definitely whether these measurements are to be taken along the top of the culmen or along its side, and we find considerable difference between the two methods. Several specimens examined might be referable to one species if measurements are made on the top of the culmen and to the other if measured along the side. The latter method is apparently the more accurate, all available specimens of *longicaudus* showing unguis longer than cere, when measured in this manner. However, in one adult, two second year, and two juvenile birds in our series, all undoubtedly *parasiticus,* the unguis and cere are about equal in length, a fact that would seem to detract considerably from the diagnostic value of these measurements. Furthermore, at least two factors interfere to render accurate measurements difficult. These are the wear of the supra-nasal saddle, which is almost absent in some specimens, and the difficulty in detecting exactly the posterior border of the same, this being frequently more or less obscured by encroachment of the feathers. Even when great care is exercised, we find ourselves unable to obtain exactly the same results in repeated measuring of identical specimens. It is probable that no two students would agree on the measurements obtained from the same material.

Although the total length of the culmen is generally greater in *parasiticus* than in *longicaudus,* averaging, in our series, 30.3 millimeters for the former and 26 millimeters for the latter, there are five specimens of *parasiticus* with culmen as short as the longest of *longicaudus,* and four specimens of *longicaudus* with culmen as long as the shortest of *parasiticus.* While the width of bill, measured at the first upper feathering, is usually considerably less in *longicaudus,* extremes overlap. In our specimens this measurement averages 9.4 millimeters in *longicaudus* as compared with 11.8 millimeters in *parasiticus,* but twelve specimens of *parasiticus* possess bills as narrow as or narrower than the widest bill of *longicaudus.*

All of the foregoing being considered, the conclusion was reached that, up to the present time, no infallible method of separating these two jaegers, in all phases of their plumage, has been advanced. Therefore, having been unable to find any further external differences of value, an examination of osteological material was decided upon. This study has produced results that are here submitted for such consideration as they may merit.

Bones of twenty-three individual Jaegers have been examined. All except three of these are represented by skins in one of the following collections: Los Angeles Museum, California Museum of Vertebrate Zoology, Loye Miller, Kenneth Stager and George Willett. There are eight specimens of *parasiticus* which are in adult or second year plumage (with black tarsi) and three adult and one sub-adult *longicaudus.* The remaining eight specimens are juvenile or second year birds with blue tarsi, six of *parasiticus* and two of *longicaudus.* Since the majority of specimens belong with skins, the present observations have necessarily been largely confined to those elements which are not needed in the preparation of the skin; however, measurements were, of course, possible on all tarsi.

The conclusion resulting from the study of skeletal material is that though *longicaudus* is on the whole a smaller bird than *parasiticus,* this is not true of every bone in the body. The important distinction between the species lies, rather, in the difference in bodily proportions. The hind part of the body is proportionately larger in *longicaudus* than in *parasiticus.* The most marked expression of this difference is found in the ratio of the tarsus to the humerus or to the ulna-radius segment of the wing. The former ratio averages 53 per cent in *longicaudus* and 45 per cent in *parasiticus,* while the ratio of tarsus to ulna in the two species averages 49 and 42 per

cent respectively, and to radius, 52 and 44 per cent, a difference of seven or eight per cent, with no overlapping of extremes.

This difference is manifested not in the length of tarsus but in the length of the wing bones. Measurements of tarsi are practically the same for both species, ranging from 43 to 46 millimeters in *longicaudus* and from 42 to 47 millimeters in *parasiticus*. Measurements of the humerus, on the other hand, show a length in *longicaudus* of from 83 to 87 millimeters and in *parasiticus* of from 94 to 104 millimeters, a difference of seven millimeters between the largest *longicaudus* and the smallest *parasiticus*. This amount, by the way, is 2 millimeters more than is to be found between *parasiticus* and *pomarinus*.

A similar distinction in size is evident in the ulna and radius, the shortest *parasiticus* measuring 102 mm. for the ulna and 98 mm. for the radius, the longest *longicaudus* only 97 mm. and 94 mm. for the same bones. Though it is possible that a larger series of specimens would lessen the difference between the species in some degree, it is highly improbable that an overlapping of extremes would occur.

Examination of the sternum, where available, indicates that this element, also, is markedly shorter (though not necessarily narrower) in *longicaudus* than in *parasiticus*. However, with this element available from only a few of our specimens, we do not include its measurements here.

It is unfortunate for the ornithologist who is studying skins that the small skeletal structure of the wing is not reflected in the length of the wing as measured by the feathers. However, the humerus is easily procured in skinning a bird, and since this bone is unnecessary to the proper preparation of the skin, we found it the most satisfactory element to save for identification. In the case of already prepared museum specimens where identification is questionable, it is not a difficult procedure to moisten the wing and remove the ulna or radius. This has been done satisfactorily with several of our specimens, including adult *longicaudus*, in order to make possible the measurements here presented.

In view of the studies outlined here, we are convinced that any modern jaeger, regardless of age or sex, with a humerus of 88 millimeters, ulna 97 millimeters, radius 94 millimeters, or less, can safely be identified as *longicaudus*, while any specimen with a humerus of 94 millimeters, ulna 101 millimeters or radius 98 millimeters, or more (until the size of *pomarinus* is reached), may be identified as *parasiticus*. It is conceivable that birds may be encountered, the measurements of which would fall between the maximum for *longicaudus* and the minimum for *parasiticus* as revealed in our specimens. We believe, however, that in such instances, the size would closely approximate one species or the other, and that the ratio of tarsus to wing bones could be used as a final check.

A key to the measurements and ratios in the two species, as represented in our specimens, appears below.

	S. longicaudus			*S. parasiticus*		
	Min.	Av.	Max.	Min.	Av.	Max.
Length of humerus	83.0 mm.	85.4 mm.	87.6 mm.	94.3 mm.	100.4 mm.	104.6 mm.
Length of ulna	90.9	92.5	96.7	101.8	107.2	110.8
Length of radius	88.3	90.6	93.7	98.5	103.5	107.5
Ratio of tarsus to humerus	50.7%	52.7%	54.1%	43.6%	45.4%	48.0%
Ratio of tarsus to ulna	47.4%	48.8%	50.2%	41.0%	42.5%	43.6%
Ratio of tarsus to radius	50.6%	51.6%	52.7%	42.2%	44.0%	46.0%

Among the facts brought out by the above study, is the discovery that only two of the four specimens recorded by Willett (Pac. Coast Avif., no. 21, 1933, p. 71) as secured by him off San Pedro, are really referable to *longicaudus*. Of these two birds, both juvenals, one was taken July 29, 1933, and the other September 13 of the same year. The other two specimens, while displaying features hitherto generally believed to belong only to *longicaudus*, are referred to *parasiticus* on osteological characters.

Los Angeles Museum, April 16, 1934.

THE TYPE LOCALITIES OF THREE BIRDS COLLECTED BY LEWIS AND CLARK IN 1806

By WILLIAM B. DAVIS and JAMES STEVENSON

Apparently the type localities of the three birds collected on the Lewis and Clark Expedition and later described by Alexander Wilson have never been definitely established. These are the Lewis Woodpecker, *Asyndesmus lewis* Gray, the Clark Nutcracker, *Nucifraga columbiana* (Wilson), and the Western Tanager, *Piranga ludoviciana* (Wilson). We believe that information is now available which will settle the status of these localities. To avoid confusion, the three species are treated separately, in the order named.

Lewis Woodpecker.—In the A. O. U. Check-list (4th ed., 1931, p. 192) the type locality of this species is stated thus: "(No locality mentioned=Montana, about lat. 46° N.)." This statement was probably based on the locality listed by Bangs (Types of Birds, Bull. Mus. Comp. Zool., 70, 1930, p. 232), which is "from Montana, about lat. 46° N.", or on a remark made by Coues (Key N. Amer. Birds, 5th ed., 2, 1903, p. 598) in which he says, " . . . it was discovered by the Lewis and Clark Expedition near Helena, Mont., Sat., July 20, 1805."

Inspection of the "Original Journals of the Lewis and Clark Expedition 1804-1806" (Thwaites ed., 2, 1904, p. 252) discloses that under date "Saturday, 20th July, 1805", Lewis, who was then encamped near latitude 46° N. on the Missouri River and thus in the vicinity of Helena, Montana, entered the following observation: "I saw a black woodpecker (or crow) today about the size of the lark Woodpecker as black as a crow. I endeavored to get a shoot at it but could not, it is a distinct species of woodpecker; it has a long tail and flys a good deal like the jay bird."

In "Wilson's American Ornithology" (Jameson ed., 1, 1831, p. 168) the following statement is made concerning this species: *"Several skins of this species were preserved* [by Lewis and Clark], *all of which I examined with care"* (italics ours). Then follows a detailed description of the bird. Since Wilson doubtless based his description on specimens in hand, and since none was collected in the vicinity of Helena, Montana, the question concerning the place from which these specimens came naturally arises. Further pursuit of Lewis and Clark's Journals throws light upon this topic.

Under date "Saturday, May 17th, 1806" (5, 1905, p. 43), the following entry was made by Clark: "[John] Shields rode out and hunted in the morning without suckcess he returned at 11 A. M. having killed only a black wood pecker with a red breast as described hereafter." Under date "Tuesday, 27th May, 1806" (5, p. 70), Lewis entered the following notes: "The Black woodpecker which I have frequently mentioned and which is found in most parts of the roky Mountains . . ., *I had never an opportunity of examining untill a few days since when we killed and preserved several of them"* (italics ours).

In order to show that the Lewis Woodpecker is the bird alluded to by the term "Black woodpecker", a few excerpts from the description as entered in the Journals (*loc. cit.*) by Lewis himself, follow: "This bird is about the size of the lark woodpecker [*Colaptes*] . . . the beak is black, one inch long . . ., somewhat curved, and sharply pointed . . . around the base of the beak including the eye and a small part of the throat is a fine crimson red. the neck and as low as the croop in front is of an iron grey. the belly and breast is a curious mixture of white and blood reed. . . the [p. 71] red reather predominates. the top of the head back, sides, upper surface of

the wings and tail are black with a g[l]ossey [brackets and letter inserted by Thwaites] tint of green in a certain exposure to the light. . . the legs and feet are black . . . it has four toes on each foot of which two are in rear and two in front. . . ".

Lewis and Clark were on their return trip in 1806, and on May 27 they were encamped on the east bank of what is now the Clearwater River, about two miles north of Lawyer Canyon, that is, about the same distance below (north of) the present town of Kamiah, Idaho. They were encamped at that place from May 13 to June 10, awaiting the opening of the passes to the east. Lewis (5, p. 33) described this camp-site thus: "Our situation [known historically as Camp Chopunnish] was within 40 paces of the river in an extensive level bottom thinly timbered with the longleafed pine. . . the hills to the E and North of us are high broken and but partially timbered; the soil is rich and affords fine grass." For an excellent map and a detailed description and photograph of this site, as it appeared in 1904, see Wheeler (Trail of Lewis and Clark, 2, 1904, pp. 112, 269-70).

Clark Nutcracker.—The type locality of this species as given in the A. O. U. Check-list (*op. cit.*, p. 228) is "(Shores of the Columbia [River between the Dalles and the mouth])". (Brackets inserted by A. O. U. Committee.) The same locality is given by Hall (Studies in the History of Ornithology in the state of Washington, etc., Murrelet, 14, 1933, p. 66). These statements were doubtless based on Wilson (*op. cit.*, p. 249), who says: "In conversation with different individuals of the party [Lewis and Clark's] I understood that this bird inhabits the shores of the Columbia, and adjacent country. . . ".

The nutcracker was first discovered by the Expedition, August 22, 1805, on the Montana side of the Bitterroot Mountains, near the headwaters of what is now Beaverhead River. No specimens were collected. The next entry in their Journals concerning this species was made nearly a year later when they were encamped on the Clearwater River. Under date "Wednesday, May 28, 1806", Lewis (Journals, 5, 1905, p. 75) made the following entry: "Since my arrival [on the Clearwater River] I have killed several birds of the *corvus* genus *of a kind found only in the rocky mountains* and their neighbourhood. I first met with this bird above the three forks of the Missouri [in Montana=Beaverhead River] and saw them on the hights of the rocky Mountains but *never before had an opportunity of examining them closely*" (italics ours). Thus the possibility that the Columbia River is the type locality of this species is definitely excluded on the basis of Lewis' statement. That Wilson (*loc. cit.*) based his description on a bird in hand is shown by the following statement: "The following description was taken with particular care, after minute examination and measurement of the only preserved skin that was saved [by Lewis and Clark] . . .".

Wilson evidently had not read the (manuscript) Journals very carefully, for Lewis (*loc. cit.*) continues: "the small *corvus* discribed at Fort Clatsop [on the Columbia River] is a different species [*Perisoreus o. obscurus*], thó untill now I had taken it to be the same, this is much larger. . .". This oversight on the part of Wilson has doubtless caused all the uncertainty concerning the locality from which the nutcracker came. The following excerpts from Lewis' Journal (*loc. cit.*) prove beyond doubt that it was the nutcracker to which he allutled: "the beak of this bird is 1-½ inches long, is proportionately large, black and of a form which characterizes this genus. . . . it [i. e., the bird] is about the size and somewhat the form of the Jaybird tho reather rounder or more full in the body. . . . the head neck and body of this [p. 76] bird are of a dove colour [in all probability an immature bird]. the wings are black except the extremeties of six large f[e]athers [brackets and letter inserted

by Thwaites] occupying the middle joint of the wing which are white. . . . the two feathers in the center of the tail are black as are the two adjacent feathers for half their width the ballance are of a pure white." Clark's description (pp. 82-83) is almost identical.

Western Tanager.—The type specimen of this species was also collected by Lewis and Clark near their Clearwater Camp and a detailed description was entered by Lewis (Journals, 5, 1905, p. 111), June 6, 1806, excerpts from which follow: "We meet with a beautifull little bird in this neighbourhood about the size and somewhat the shape of the large sparrow. . . the plumage is remarkably delicate; that of the neck and head is of a fine orange yellow and red. . . the breast, the sides, rump. . . are of a fine orange yellow. the tail, back and wings are black. . .".

The A. O. U. Check-list (p. 311) lists the type locality of this species as: "(Prairies of the Missouri=mouth of Lolo Creek Fork of Clearwater River, western Idaho.)" This locality is some twelve miles to the northwest of Lewis and Clark's camp. We grant the mouth of Lolo Creek to be within possible range of their hunting activities, but since the immediate vicinity of their camp was suitable to these birds, and since no mention is made any place in their Journals of anyone hunting in that locality, it seems more probable that the specimens of this, as well as the other two species, were taken in the immediate environs of their camp.

To summarize:

1. From May 13 to June 10, 1806, Lewis and Clark were encamped on the east side of the Clearwater River about two miles north of the present town of Kamiah, Idaho.

2. While encamped at this place, three species of birds were collected and preserved, all of which were later described by Alexander Wilson from specimens in hand.

3. The immediate vicinity of their camp presented habitats suited to all three species.

4. No records are available elsewhere in their Journals relating to the taking of these birds at any different locality.

Therefore, on the basis of the above information, it seems necessary to designate the type locality for each of these three species, namely, Lewis Woodpecker, Clark Nutcracker, and Western Tanager, as: About two miles north of Kamiah, Idaho County, Idaho.

Upon the return of the Expedition, the ornithological specimens were deposited in Peale's Museum, Philadelphia. With the decline and disintegration of that institution, the specimens were scattered, some of which later appeared in Boston and were acquired by Charles J. Maynard. Among these was a specimen of the Lewis Woodpecker, without much doubt an original, and in all probability the only specimen out of the collection made by Lewis and Clark still extant. (See Journals, 6, 1905, p. 121, footnote of a communication from Witmer Stone.) What is now considered the type specimen of the Lewis Woodpecker is listed by Bangs (*loc. cit.*) as no. 67,854 in the Museum of Comparative Zoology, and is, perhaps, the same specimen to which Dr. Stone referred. The type specimens of the other two species, in all probability, are lost. (See Stone, Proc. Acad. Nat. Sci. Philadelphia, pt. 1, 1899, p. 11.)

Museum of Vertebrate Zoology, Berkeley, California, April 20, 1934.

FROM FIELD AND STUDY

The Song of the Mountain Bluebird.—The Mountain Bluebird (*Sialia currucoides*) is generally considered to be a songless bird. I do not recall having seen a description of its singing, although some mention of its song has evidently been made. Dawson, in "The Birds of California" (p. 782), after describing the call and alarm notes of the Mountain Bluebird, writes: "Other song the birds have none . . . For here, again, the entire song tradition, including the 'delightful warble' attributed to the bird by Townsend, appears to be quite without foundation, as in the case of *S. m. occidentalis*."

I do not know whether all male Mountain Bluebirds sing, or if songs are given by some of the birds throughout the breeding range of the species; but I do know that at least some of the Mountain Bluebirds which nest in this locality (Lincoln County, Montana) regularly sing a definite, distinctive song. On frequent occasions during the last seven summers I have forsaken the comfort of my bed to enjoy their subdued, gentle singing.

For one must be an early riser indeed if he wishes to hear the Mountain Bluebird's song. Singing commences in full darkness, and continues for a few minutes to as much as an hour, ceasing soon after daylight. Thus during June the period of song here lies between 3 and 4 o'clock (Mountain standard time; in the extreme western portion of the county, 2 and 3 a. m., Pacific standard time); in early spring and midsummer it occurs about half an hour later. Only once during the past seven years have I heard the bird's song at any other time of the day: At 9 o'clock on a dark, rainy morning in March of 1932, a Mountain Bluebird gave weakly a few snatches of its usual daybreak song.

As the demands of the day make it impossible for me regularly to indulge a penchant for early morning strolls, I am unable to delimit the season of the Bluebird's singing; I know, however, that the birds sing at least frequently from early April until the middle of July. (Nesting activities begin usually the last week of April, the second broods of young leaving the nests about July 15.)

In form, the song is almost a replica of the familiar caroling of the Western Robin; but it is given very softly, crooningly, with the unmistakable quality of the Bluebird's gentle call. Though I have not determined the distance at which the singing can be heard, I doubt if it is audible at seventy yards. The notes are repeated over and over, without a pause, for as much as thirty minutes at a time.

Because of its marked resemblance to the song of the Robin, despite its unconformity to the normal "purposes" of bird song (the birds are mated and the nesting territories selected before singing begins in the spring), the song of the Mountain Bluebird appears to be a possible illustration of retrogression in the evolution of bird song. It seems probable that the song, at some time in the past, was louder and more varied, and was sung more commonly, than it is now; and that it is gradually being lost, even as the species is losing other thrush-like characters. If this be so, it is possible that some or all of the Mountain Bluebirds in some parts of their breeding range are already songless, as the testimony of many writers indicates.—WINTON WEYDEMEYER, *Fortine, Montana, February 5, 1934.*

Unusual Mountain Bluebird Nests.—In the January, 1933, number of the "Auk" (p. 111) Adolph Murie describes a robin's nest utilized by chickadees. Somewhat similar nesting habits of the Mountain Bluebird (*Sialia currucoides*) were observed in Jackson Hole, Wyoming.

On June 3, 1932, on the river bottom along lower Gros Ventre River, Wyoming, I found a nest situated about nine feet up in a large cottonwood. A female Mountain Bluebird was incubating five eggs and the male was hovering near with food in his beak. I revisited the place on July 4, after the young had left, and collected the nest, at that time containing a single addled egg.

Close examination revealed that this was an old Robin's nest, somewhat dilapidated, for the mud foundation was not continuous all around the rim. The old nest had simply been filled with weathered grass, other plant stems, and strips of bark, really the same type of material that had gone into the construction of the original Robin's home. There were no feathers in the lining; in fact, I could not see that a definite lining had been differentiated.

The nest had been placed close to the cottonwood trunk, pretty well concealed by a great tangle of drooping limbs and twigs, so characteristic of these trees.

On June 24, 1932, another nest of a Mountain Bluebird was found in a shed on a farm west of Jackson, Wyoming. The birds entered the building by one of several small holes in the wall and the nest, which was a rather loose, bulky structure, was placed on top of a two-by-four near the eaves, just as a Robin's nest would have been placed under similar circumstances.

In both these instances the bluebirds had departed from their customary habits of nesting in cavities. Yet in each case there were suggestive circumstances.

Recalling again the article in the Auk, on the chickadee, referred to above, we find that the Robin's nest occupied by those birds was unusually deep and they had excavated farther through the mud bottom. This evidently gave the chickadees a semblance of the usual nesting cavity.

In the case of the bluebird nesting in the cottonwood, there was nothing but a normal Robin's nest, but I could not help suspecting that the tangle of sheltering twigs so effectively screened in the old nest that the bluebirds, on the lookout for the accustomed cavity and finding the old hidden nest by the tree trunk, experienced a sense of shelter, somewhat akin to that of a true cavity, sufficiently to arouse their nest-building activities.

In this connection it is of interest that about the middle of September, 1933, a number of Mountain Bluebirds appeared at my home in Jackson, Wyoming, and for several days both sexes were busy hovering about the various bird boxes. In a small dead fir tree were the remains of an old Robin's nest, disintegrating, but still retaining the cup shape. A male bluebird settled into this old nest and went through the motions of shaping a nest "cup" with its breast. No nest could be less sheltered than this one, located as it was in a small dead tree stripped of foliage.

Going back to the nest in the shed, that structure was not in a cavity, to be sure, but it should be noted that the birds entered through a hole in the wall, which was normal, and while the large interior of the building should have struck the birds as anything but a normal nesting cavity, still the darkened interior, together with the entrance hole, may have furnished sufficient sense of protection to inspire their nest-building activities.—OLAUS J. MURIE, *Bureau of Biological Survey, Jackson, Wyoming, February 19, 1934.*

A Record of the Cape May Warbler in Arizona.—In July, 1933, while engaged in a search for other specimens, I found in the mounted collection in the Gallerie des Oiseaux, at the Museum d'Histoire Naturelle in Paris a male *Dendroica tigrina*, ticketed as "Dendroica townsendi. Arizona." Reference to the catalogue showed that this specimen (no. 1876-887) came to the museum, with two other birds, from J. A. Spring of Arizona in 1876. One of this trio, catalogued as "*Geothlypis trichas*," was found in the collection and proved to be a specimen of *Geothlypis trichas occidentalis*. The third bird, a "Haemophila" of some species, I was not able to locate. In view of the contributory evidence of the Western Yellowthroat there is little reason to doubt the authenticity of the Cape May Warbler record. While I am not too familiar with the seasonal plumages of the species, the bird in question appears to be a fully adult male taken in the fall.—A. J. VAN ROSSEM, *California Institute of Technology, Pasadena, California, February 21, 1934.*

Further Concerning Vernacular Names.—The moot question of what kinds of vernacular names are most useable will not down; for instance, see the lively continuation of the discussion by Taverner and Stone in April *Auk* (LI, 1934, pp. 279-281). It may thus be in order to call attention to some usages in practice abroad. Stuart Baker in his latest work on Indian birds (The Nidification of Birds of the Indian Empire, London, Taylor and Francis, vol. I, 1932, vol. II, 1933) describes and justifies the plan he adopts in the following words.

" . . . Recently many writers have drawn attention to the fact that the trivial names of Indian birds often convey no descriptive meaning to the hearer either as regards the birds themselves or of the country they occupy. . . ."

"It will be noted that I have completely dropped the use of surnames of people as trivial names. It may be argued that to those who knew well, either personally

or by reputation, the owners of the names in question, they should at once convey a knowledge of the geographical areas in which the bird so named is found. Even this, however, is not always the case. Birds are often named as a compliment to others who have worked on special groups, though the bird itself may only be found in an area never visited by the person after whom it is called. I have, therefore, eliminated these names altogether. In giving the bird a new trivial name I have tried to find some character in each species which differentiates it from other species of the same genera. This character I use throughout as the specific name, qualified by geographical additions to the names of the subspecies.

"Thus the species *Stachyridopsis rufifrons* I call the Red-fronted Babbler, the red forehead being the specific character separating it from its nearest ally, the Red-headed Babbler. Then its geographical subspecies I call the Burmese Red-fronted Babbler, instead of Harrington's Babbler. In this way the trivial name at once conveys to the hearer its important specific character and the area where it is found."

I select to illustrate Stuart Baker's system, from his volume I, vernacular names as follows: The Sikkim Yellow-billed Magpie, The Western Yellow-billed Magpie, The Hooded Racket-tailed Magpie, The Western Himalayan Red-crowned Jay, The Western Cinnamon-bellied Nuthatch, The Eastern Himalayan White-crested Laughing-Thrush, The Simla Streaked Laughing-Thrush, The Ceylon Yellow-eyed Babbler, The Shan States Short-tailed Wren-Babbler, The Assam Red-headed Babbler, The Assam Red-throated Tit-Babbler, The Bengal Red-whiskered Bulbul, The Malay Blue-bellied Bulbul, The Manipur Brown-throated Tree-Creeper, The Nepal Scaly-breasted Wren.

It looks to me as though Stuart Baker's way of forming common names of birds, so as to be really informative to the amateur type of bird student, might well be studied seriously by the committee who has in charge preparation of the next edition of the A. O. U. Check-list. The article "The" could be omitted, perhaps. But the replacement of personal names, meaningless to most amateurs, with descriptive or geographic terms, would alone quite surely be welcomed by most of the young generation.

As examples, among the Paridae in the last Check-list (pp. 229-235), I suggest emendations as follows. The four main groups of chickadees could be called the Black-capped Chickadees, the White-browed Chickadees, the Brown-capped Chickadees, and the Chestnut-backed Chickadees. Then the combinations for some of the subspecies would be: Oregon Black-capped Chickadee (for "Oregon Chickadee" in the current A. O. U. Check-list), Idaho White-browed Chickadee (for "Grinnell's Chickadee"), Southern California White-browed Chickadee (for "Bailey's Chickadee"), Rocky Mountain White-browed Chickadee (for "Mountain Chickadee"), Columbian Brown-capped Chickadee (for "Columbian Chickadee"), Santa Cruz Chestnut-backed Chickadee (for "Barlow's Chickadee"), etc.

Then these names would mean something intrinsically to the user of check-lists just as those vernaculars of Indian birds cited from Stuart Baker instantly gave *me* information as to chief features of the races and as to the places of main occurrence. May it not prove possible for the next A. O. U. Committee thus to contribute more helpfully toward the needs of the beginner in bird-study?—J. GRINNELL, *Museum of Vertebrate Zoology, Berkeley, California, May 7, 1934.*

The Black Pigeon Hawk in Santa Clara County, California.—A Black Pigeon Hawk (*Falco columbarius suckleyi*) was secured by the writer about eight miles west of Gilroy on February 13, 1934. This bird was a female and there was a male present which seemed to be of the same form but unfortunately it could not be secured.

Thanks are due to Dr. Joseph Grinnell for the identification of the skin and for the suggestion that it be recorded. There are very few records for California and this appears to be the first record for the San Francisco Bay counties.—W. E. UNGLISH, *Gilroy, California, April 10, 1934.*

Fossil Bird Remains from the Manix Lake Deposits of California.—In cataloging the collections of the University of California Museum of Paleontology, Mr. C. J. Hesse recently discovered five unidentified fossil bird bones in the vertebrate remains from the Manix beds in San Bernardino County, California. These have been turned

over to me for description. Since little has been written concerning the beds in which these bird bones were found a brief history of them is in point.

In the summer of 1913, J. P. Buwalda examined a series of mammal-bearing lake beds in the eastern Mohave Desert. For these beds he proposed the name *Manix Beds* and referred to the lake in which they were deposited as Manix Lake (Buwalda, J. P., Univ. Calif. Publ. Dept. Geol., 7, 1914, p. 444). In addition to the evidence furnished by their geologic nature they are further demonstrated to be of lacustral origin by the presence, at several horizons, of fish vertebrae and four species of fresh water mollusks. The greatest exposed thickness of the beds is 75 feet. The lake basin is about 120 miles northeast of Los Angeles and 20 to 40 miles east of Barstow. Its area is irregular in outline; it is 20 to 25 miles in length, and covers 200 to 300 square miles. Expressed roughly, it occupies the area between the Calico and Cady mountains in an east-west direction, and between the Alvord Mountains and Kane Mountain in a north-south direction.

The Manix Lake must have come into existence by the impounding of the water furnished mainly by the Mohave River, since the topography of this region has not changed sufficiently since Manix time to suggest that some other stream was the principle source of water. The present lower channel of the Mohave River is dry throughout most of the year and the sink at its end contains water only during a few weeks of each year. It is evident that the climate of the Manix Lake time was characterized by considerably more precipitation than occurs in this region today. The disappearance of the lake was due to the increasing aridity of the climate, the partial filling of the basin with sediments, and the lowering of the outlet.

The remains of six species of mammals were collected from these beds but it is impossible to specifically identify any of them because they are either fragmentary or represent non-diagnostic elements. The fauna was originally considered to be of Pleistocene age (*op. cit.*, p. 451) but the presence of the metapodial elements of a small horse indicate that the beds may be Pliocene in age. It is safe to say that they are either Lower Pleistocene or Upper Pliocene.

In contrast to the nature of the mammal remains, all but one of the bird bones are well preserved and identifiable. The two species represented are the White Pelican (*Pelecanus erythrorhynchos*) and the Western Grebe (*Aechmophorus occidentalis*).

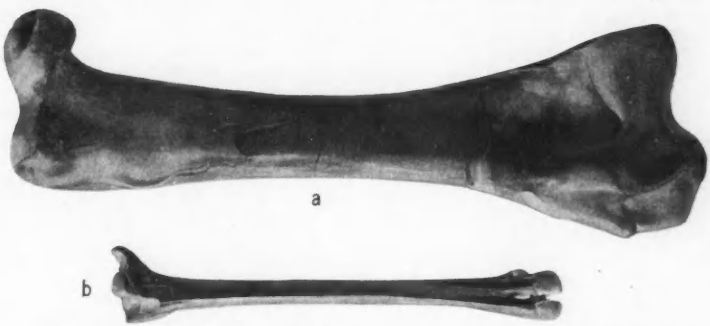

Fig. 28. *a*, Left femur of *Pelecanus erythrorhynchos*, U. C. Mus. Paleo. no. 21855. *b*, Right tarsometatarsus of *Aechmophorus occidentalis*, U. C. Mus. Paleo. no. 21859. × 1.

Pelecanus erythrorhynchos. Complete left femur (fig. 28, a), Univ. Calif. Mus. Paleo., no. 21855, loc. 676, Manix Beds, San Bernardino County, California, collected by J. P. Buwalda, 1913. This bone was broken into three parts, but it has been repaired and is now complete except for a few chips from the dorsal surface of the shaft. All of the finer details of the bone are preserved and agree minutely with specimens of the present day White Pelican. The measurements of the fossil are about .5 mm. larger than the average of four recent specimens, while one of the latter is larger than the fossil in most measurements. Measurements: greatest

length, 112.3 mm.; width of proximal end, 29.4 mm.; width of distal end, 31.9 mm.; smallest transverse diameter of shaft, 13.0 mm.

In addition to the femur there are two phalanges that are referable to this species. These are the basal phalanx of the 2nd digit (inner toe), U. C. Mus. Paleo., no. 21857, and the basal phalanx of the 3rd digit (middle toe), U. C. Mus. Paleo., no. 21858. They are both of the left foot and have been carefully compared with articulated and disarticulated skeletons. There are no data as to whether or not these toe bones were associated with the femur but the circumstantial evidence points to this conclusion.

Aechmophorus occidentalis. Complete right tarsometatarsus, U. C. Mus. Paleo., no. 21859. This bone was compared with a series of six tarsometatarsi of the present day Western Grebe and was found to be identical with these bones and near the average of their sizes. The length from intercotylar tuberosity to middle cotyla is 71.8 mm.

Indeterminate: Phalanx, U. C. Mus. Paleo., no. 21856. This toe bone is from a young individual and is so badly worn that I am unable to identify it. It is long and relatively slender, and apparently a basal phalanx. Length, 44.2 mm.

It is interesting to observe that both the White Pelican and the Western Grebe have been found in the Pleistocene lake deposits of Fossil Lake, Oregon. The Manix Beds offer a worthwhile opportunity for further collecting which might produce sufficient material for a comparison of the avifaunas of these two prehistoric lakes.

Comparative material was loaned through the courtesy of Dr. J. Grinnell of the Museum of Vertebrate Zoology, University of California. The drawings were made by Mr. Owen Poe.—LAWRENCE V. COMPTON, *Museum of Paleontology, University of California, Berkeley, California, March 1, 1934.*

Some Shore-birds in the Humboldt Bay Region of California.—Stilt Sandpiper (*Micropalama himantopus*). An immature female was taken on September 10, 1933, at a small pond near the mouth of Clark's Slough, within the town limits of Eureka. Dr. J. Grinnell writes of the above capture: "There is not even a hint, that I know of, in the literature to date, of the presence of the Stilt Sandpiper on our California coast."

American Knot (*Calidris canutus rufus*). On September 14, 1924, three knots in winter plumage were scattered among a large flock of Long-billed Dowitchers on a small island in Humboldt Bay. On May 8, 1927, two knots were seen flying over the surf across the bay from town, and a female was taken. On September 8, 1929, a lone knot was found on the ocean beach. On August 27, 1932, twelve knots were found in a large flock of dowitchers on the ocean beach across the bay from Eureka.

Pectoral Sandpiper (*Pisobia melanotos*). On October 18, 1931, three pectorals were found in a small pond of stagnant water within the town limits. November 7, 1931, there was one bird. September 18, 1932, there were five pectorals, and on September 23, the same year, six. In 1933, on October 8 there were seven pectorals, on October 15, ten, and on October 22, five.

Lesser Yellow-legs (*Totanus flavipes*). On August 17, 1924, seven of these birds were found in a pond on Indian Island in Humboldt Bay; a male was taken. In 1932, five birds were found in Eureka limits on August 16; on August 28 there were four birds, on August 31, four, and on September 4, three birds. In 1933, on August 26 there were three birds, on September 3, six, and on October 15, four birds. All the birds within the town limits of Eureka were found in the same pond, near Clark's Slough.

Long-billed Curlew (*Numenius americanus*). On August 8, 1925, nine of these curlews were found on a small island in Humboldt Bay. On August 15, 1924, there were four on the same island. Weekly, from January 3, 1926, to April 10, 1927, I saw a Long-billed Curlew either on the ocean beach, or the Bay shore near the mouth of Elk River.

Specimens of the above birds were identified for me by Dr. J. Grinnell at the Museum of Vertebrate Zoology, University of California.—JOHN M. DAVIS, *Eureka, California, January 14, 1934.*

Costa Hummers Wintering in the California Deserts.—During several midwinter collecting trips to the Colorado River above Potholes (December, 1924, December, 1925), some species of small hummer was repeatedly seen among the desert scrub

near California's one sparse sahuaro grove. They eluded capture on all occasions, since no blossoming shrubs were evident, and they shifted rapidly, presumably in search of insects. Specific identity remained a question. On December 27, 1932, hummers were again found in bleak desert six miles northeast of Amboy. Here there were a few shrubs in bloom (*Isomeris*), and individuals had a tendency to return to one spot though exceedingly shy. One bird was collected and others seen, all of them females. The bird collected was a Costa Hummer (*Calypte costae*).

On February 11 and 12, 1934, the region near Clement Well in the Orocopia Mountains yielded a number of Costa Hummers of both sexes. Males were in nuptial flight and of course may have represented a vernal influx from the south though the date is earlier than is customary for the species. Although the Potholes birds could not be positively identified, the probability is that they were *C. costae*. The Amboy and the Clement Well birds were positively determined. Grinnell (Condor, 6, 1904, p. 42; same, 14, 1912, p. 154) records the species from Palm Springs in limited numbers during winter months. His 1904 record was at the New Year's season, and proves beyond doubt the winter sojourn. His 1912 records are for February 11 to 13, which coincide with my own Clement Well records, and may represent early summer arrivals. My earliest date for the species in Los Angeles is February 20 (1921), but it is fairly abundant by the middle of March.

Grinnell speaks of Palm Springs quite rightly as having the mildest of winter climates, and implies that this fact may have a bearing on the presence of Costa Hummers as winter birds. The Amboy locality is on high, exposed terrain, and was sharply cold at the time of our visit. Snow lay at the base of the mountains at but slightly greater altitude. The Potholes area is very cold in winter and exposed to severe winds. I am inclined to think that the birds were influenced less by external factors than by some internal physiological condition. At any rate, these widely separated desert localities would suggest that Costa Hummers may occur in winter in limited numbers over a large part of southeastern California.—LOYE MILLER, *University of California at Los Angeles, February 19, 1934.*

Additional Records for the Barrow Region, Arctic Alaska.—Since the publishing of the list of birds of the Barrow Region, Arctic Alaska, for the Program of Activities (4, no. 2, 1933) of the Chicago Academy of Sciences, additional specimens have been received at the Academy and by L. B. Bishop from Mr. Charles D. Brower and Mrs. Henry Greist. Included in the shipment were six species not heretofore included among the birds of the area, as follows:

Cyclorrhynchus psittacula, young female (L. B. B., no. 49393), Barrow, Alaska, October 3, 1932.

Passerella iliaca unalaschcensis, adult male (L. B. B., no. 49401), Barrow, July 1, 1933.

Phaeopus hudsonicus, [adult female] (L. B. B., no. 49403), Cape Halkett, Alaska, June, 1933.

Phaeopus hudsonicus, unsexed (C. A. S., no. 6302), Colville River, Alaska, June, 1933.

Phaeopus hudsonicus, unsexed (C. A. S., no. 6303), Colville River, Alaska, June, 1933.

Buteo lagopus s.johannis, breeding adult (C. A. S., no. 6298) Colville River, Alaska, July, 1933.

Buteo lagopus s.johannis, female (C. A. S., no. 6299), Colville River, Alaska, July, 1933.

Larus delawarensis, female (C. A. S., no. 6300), 2nd year, Barrow, Alaska, July, 1933.

Hylocichla guttata guttata, female (C. A. S., no. 6293), May 25, 1933.

The specimens in the Bishop collection were secured by Mr. Brower, and those in the Academy by Mrs. Greist. The birds from the Colville River were taken approximately sixty miles from the mouth. In addition, Mrs. Greist sent two pairs of breeding duck hawks, *Falco peregrinus anatum*, from the Colville River (C. A. S., no. 6294). They were beautiful adult birds, the first in high plumage which we have received from that area.—A. M. BAILEY, *Chicago, Illinois*, and L. B. BISHOP, *Pasadena, California, February 14, 1934.*

Wren-tit Banded in 1925 Again Trapped.—In previous issues of the Condor (33, 1931, p. 128; 35, 1933, p. 39) I reported the capture of a Gambel Wren-tit (*Chamaea fasciata fasciata*) bearing band number 91519. This bird was banded in Strawberry Cañon, near Berkeley, on March 22, 1925, by E. D. Clabaugh.

Since I began banding in this location in September, 1930, I have trapped this bird thirteen times, the first time on February 3, 1931, and the last time on February 21 of this year, 1934. This Wren-tit could not have been hatched later than June, 1924, so that at the present time it must be nearly ten years old, and may be much older. I can find no other record of a passerine bird in a wild state living to this age. The nearest to it that I can find recorded is a Mockingbird banded May 8, 1925, by Mr. Harold Michener, in Pasadena. This bird was then at least one year old. It was recaptured a number of times, the last time being on May 11, 1933, when it must have been not less than nine years old.—E. L. SUMNER, SR., *Berkeley, California, February 22, 1934.*

Some Unusual Winter Records for Birds in Goshen County, Wyoming.—The records given here were obtained on two trips with a total of eleven days work in Goshen County. Judgment as to what records were unusual was also influenced by a large amount of work in adjacent counties. Birds that were rare in this county and not in some other counties are not mentioned.

Only one record was obtained for the following: Gadwall (*Chaulelasmus streperus*), December 26, 1928; Baldpate (*Mareca americana*), January 1, 1930; Sharp-shinned Hawk (*Accipiter velox*), December 27, 1928; Sparrow Hawk (*Falco sparverius*), January 6, 1930; and Brown Thrasher (*Toxostoma rufum*), January 4, 1930. Forty Gadwalls were counted, five Baldpates, and one each of the others. All have been seen in winter in Wyoming in other places except the Brown Thrasher.

Pintails (*Dafila acuta*), Green-winged Teal (*Nettion carolinense*), Marsh Hawks (*Circus hudsonius*) and Prairie Falcons (*Falco mexicanus*), were seen on several days. In January, 1930, the Teal were common near Torrington and the record is unusual only in the fact that this is the only place in southeastern Wyoming that I have found them in mid-winter.

The Brown Thrasher was a big surprise as I have spent much time looking for birds in winter in Ohio, Pennsylvania, and Maryland, where the weather is milder than in Wyoming and never saw it in those states at this season; hence I consider its occurrence in January in Wyoming as entirely accidental, one of those things that will probably not happen more than once in a lifetime.

The number of ducks present was due to the open water of the North Platte River during the mild Decembers of 1928 and 1929. Although most of the ducks leave in November every year, there are a few that linger until the lakes and streams are almost covered with ice. In severe Decembers only the most hardy ducks, the Mallards, Golden-eyes, and American Mergansers will remain. The species remaining during the mild winters will vary somewhat, making the study of the winter birds more interesting. For example, the Baldpate was seen in one winter only, while in the previous year the outstanding records were the Gadwall and two Ring-necked Ducks (*Marila collaris*) that were seen on the river just over the line in Platte County on December 30 and 31, 1928.

The number of hawks on the list indicates that there have been several mild winters in succession, as land birds are relatively scarce for a year or more after a severe winter no difference how mild the succeeding winters may be. Weather records show that there had been several relatively mild winters in succession previous to 1928.—OTTO MCCREARY, *Laramie, Wyoming, February 14, 1934.*

Bird Notes from the Farallon Islands.—Largely because of present stringent regulations for the protection of the breeding birds of the Farallon Islands, very few recent observations have been made regarding the interesting sea-bird rookeries located there. A rigidly enforced regulation, administered by the chief of the Lighthouse Service at San Francisco, prohibits even the persons stationed on the island from going to the West End (where the breeding population is concentrated) during the period from April 15 to August 15 each year. No boat of any kind may land on the islands at any time without special permission from San Francisco Lighthouse

Service headquarters, and during the period mentioned above, this permission is granted only to the supply tender which makes weekly trips. Any infraction of these regulations is handled promptly and decisively by federal agencies.

During the period from August 16 to August 18, 1933, the writer, accompanied by Lawrence V. Compton and Gordon Bolander, had opportunity to make a few observations incidental to bird-banding operations carried on there. Of these notes, the following seem worthy of record. All observations are concerned with conditions upon the main island, where the lighthouse is located.

Oceanodroma homochroa. Ashy Petrel. This bird evidently has an extremely long breeding season. Bent (U. S. Nat. Mus. Bull., 121, 1922, p. 162) gives a late date for eggs as July 13. This can now be extended over a month, as we found several fresh eggs of this species on the nights of August 16 and 17. We also found many downy young, one of which was still damp from hatching, and none of which had yet developed any contour feathers except for budding primaries. The adults seemed dazed when taken from their burrows, although it was long after dark, and contrary to some observations of earlier students, fell to the ground when tossed into the air. Here they flopped about for a time, but finally managed to fly off. This bird was found abundantly on the eastern half of the island, and may be equally plentiful on the western half, where we made no observations concerning them.

Ptychoramphus aleuticus. Cassin Auklet. As estimated from the numbers banded, this auklet was outnumbered two to one by the Ashy Petrel. The auklets seemed spotty in distribution, in contrast to the general presence of the petrel. Auklets seem much more prone to vomit than do petrels, and were practically unanimous in this regard. The late egg date can be extended from July 20 (Bent, U. S. Nat. Mus. Bull., 107, 1919, p. 116) to August 17, when fresh eggs of this species were found. These birds are much clumsier than the petrels and have much more difficulty in leaving the ground.

Lunda cirrhata. Tufted Puffin. Only a small portion, about 300 individuals, of the breeding population remained. The lighthouse keeper told us that puffins usually stay later, but that the entire migration had been advanced two or three weeks this year, both in the spring and in the fall. No nesting birds were found by us, although several were seen carrying fish into burrows. Some early accounts record this species as being abundant on West End. We found no puffins at all except on the rocks immediately surrounding the lighthouse; and from information supplied by the keepers, it seems that the birds have shifted their entire colony to this eastern section of the island.

Uria aalge californica. California Murre. Murres have been woefully depleted. Only three young were found on the island, and not more than 25 or 30 adults were seen on the entire trip. It is likely that the main colony of this species had emigrated early, as did the puffins, but at any rate the present numbers are but a ghost of the thousands reported by early observers. Residents of the island, who were there some twenty years ago, say that at that time oil-soaked plumage was responsible for a vast number of deaths and that they had to kill as many as twenty birds daily because of their hopelessly damaged plumage. We found no evidence of any damage to birds by oil, and island residents say that during the past few years there has been a very marked decrease in the amount of oil present on the water. Almost the entire area said once to have been occupied by murres was heavily populated with gulls and cormorants at the time of our visit. Murres seem quite devoted to their young; possibly a lesson learned from previous sad experience with gulls. One parent allowed a cautious approach to within three feet before showing nervousness, and we withdrew and left it to remain with the chick. Another adult, unseen until it flew, remained in a crevice until accidentally touched while searching for a chick. The chicks we found were all protected from attacks of gulls by the surrounding rocks and crevices. Although we saw no gull actually attack a young bird, the unanimous reports of others strongly support our inferences derived from young gulls, that the gulls may be responsible for a considerable decrease in the murre population.

Larus occidentalis. Western Gull. No subspecific determination was made of this species. It is hoped that returns from birds banded will afford this information. There were several hundred young, only a few of which were less than half grown. We found only a single specimen which still lacked contour feathers, although several showed much of their downy coat. Most of these young birds had been more or

less severely injured around the head, apparently by adult gulls, and a heavy mortality was evident. Early reports are practically unanimous in saying that gulls took frequent opportunity to kill and eat young birds of both murres and cormorants, and I see no reason why they would not do likewise with the young of their own kind. At any rate, we frequently saw adults peck viciously at the half-grown young, and there can be no doubt that the injuries we witnessed were so inflicted. Although the normal clutch of eggs is three, we saw only a single case of a parent caring for this number of young. Many of the adults were afflicted with a sort of paralysis, which seems fatal. The light-house keeper said he believed the disease was contracted from poultry formerly kept on the islands, which suffered from an apparently identical disease.

Phalacrocorax auritus albociliatus. Farallon Cormorant. Cormorants occupy the west end of the island, and this species occupies the less precipitous area. Several hundred young birds were found, of all sizes, and one nest of eggs, which, however, was probably deserted. Mention of this nest is included here, because it was surrounded by others of the same species, and because no nests of other forms were in the immediate vicinity. A number of entirely naked young were found, and the youngest was probably hatched not earlier than August 15.

Phalacrocorax penicillatus. Brandt Cormorant. The Brandt Cormorant occupies the steeper slopes of the west end of the island, and seems the most numerous of the three forms of cormorant. Although the number of young of this and of the preceding species was about equal, there were many more adults of this species than of the other. The breeding season is somewhat earlier, as the young seemed all to be more than half grown.

Phalacrocorax pelagicus resplendens. Baird Cormorant. Only about a hundred of these birds were seen, nearly all on the extremely steep slope at the southwest end of the island. A few were found on the equally precipitous slope at Tower Hill, northwest of the lighthouse. No young were identified as belonging to this species, but I believe that our presence, the first human intrusion since April 15, caused many of them to enter the water for the first time. There was a large "raft" of cormorants, both adults and juveniles, in the water near the nests and it seemed probable that many of them were of this form.

Cepphus columba. Pigeon Guillemot. Guillemots were numerous on the east and northeast parts of the island. A few young were found, all nearly ready to fly. The lighthouse keeper told us that these, in common with all others except the murres, had increased noticeably within the last two or three years.

Falco peregrinus anatum. Duck Hawk. A dead Duck Hawk was found and queries led to the information that this bird had been electrocuted while on the radio antenna, from which it was wont to attack and kill the petrels and auklets as they passed to and from their burrows. Two other hawks, presumably of the same species, left the island at the time of their companion's death, and have not been seen since. We were told by the lighthouse keeper that a pair of these birds successfully bred on the rocks below the lighthouse in 1932. I have found no previous record of this species nesting upon the Farallon Islands.

Salpinctes obsoletus. Rock Wren. Two broods of three each were found, one of which had just left the nest, and the other of which was just ready to leave. Wrens are common over the entire eastern half of the island, but seem not to inhabit West End, where plants are much less abundant.

Other birds seen while on the island include the English Sparrow (*Passer domesticus*), California Linnet (*Carpodacus mexicanus frontalis*), Wandering Tattler (*Heteroscelus incanus*), and Northern Phalarope (*Lobipes lobatus*). A careful lookout was kept for the Beal Petrel and the Rhinoceros Auklet, but it failed to reveal any indication of the presence of these forms. We searched the localities, as nearly as they could be determined, from which they have previously been taken, but in vain.

Reports of a high mortality from migrating birds striking lighthouses elsewhere, caused me to inquire from the lighthouse keeper whether he had noticed such an occurrence on the Farallon Islands. He told me that he was unaware of any deaths, except of petrels and auklets, from this source.—CLARENCE F. SMITH, *Berkeley, California, January 31, 1934.*

Unusual Nesting Records from Northern Arizona.—During the past few years it has been the writer's privilege to make certain observations of the birds of northern Arizona under the direction of the Museum of Northern Arizona as part of a project

to make better known the wild life of the country. The following records are offered separately at this time.

Astur atricapillus striatulus. Western Goshawk. Apparently there are no published nesting records of the Goshawk from northern Arizona. On July 2, 1931, Mr. D. Irvin Rasmussen, Ranger in the Kaibab National Forest, showed me the nest of a Goshawk. It was a platform eight inches thick and nearly one and one-half feet in diameter, and was placed on four south-facing branches, approximately forty-five feet above the ground, next to the trunk of a western yellow pine. The nest was made of large sticks and lined with fresh green twigs of Douglas fir; it contained two fledglings and these were photographed in a natural position. Both parents were quite shy and would not come close to the nest, but kept up a continuous squawking. The nest was near the fire observation tree in Road Hollow, five miles southwest of Dry Park, Kaibab Plateau, Coconino County, in the Transition Zone, at an altitude of 8000 feet. An attempt was made to collect one of the parents, but they both evaded the gun. Since this record, several rangers on the Kaibab Plateau have reported that they have seen Goshawks sparingly during the summer months. A. H. Miller (Condor, 34, 1932, p. 96) saw an adult Goshawk twice on the Kaibab Plateau, once near Dry Park, June 24; the second time near Jacob's Lake, June 25 or 26, 1931.

An immature female, young of the year, was shot during the last days of September, 1933, by Mr. W. A. McDowell of Jacob's Lake, Kaibab Plateau, but the bird was in too bad condition to be preserved. However, the wings and tail were sent to Mr. George Willett of the Los Angeles Museum who believes the bird to have been the Western Goshawk. Dr. H. C. Oberholser very kindly examined available breeding Goshawks from Arizona, New Mexico, and other western states, and says: "My opinion still is that the bird of New Mexico and Arizona is the western form, *A. a. striatulus*, if this race be recognized. In the adult there is not much difference between the two, but young birds are more easily distinguished."

Pandion haliaëtus carolinensis. American Osprey. The breeding status of the American Osprey in Arizona at the present time is rather uncertain, although Cooke (Auk, 31, 1914, p. 403) recorded "several" on the authority of A. K. Fisher from near Camp Verde, June 26-29, 1892; and Jackson (Condor, 24, 1922, p. 25) reported the bird common at Roosevelt Lake from May 19 to 29, 1916.

Ospreys with good sized young in the nest were observed by Mrs. Grover Pfluger of Espero, Arizona, July 2, 1933, on the nearby Black River in the Transition Zone of the White Mountains at an altitude of 7500 feet. For verification of this record, Mrs. Pfluger showed the writer two other Ospreys' nests which she said had been occupied for several summers previous. These nests were on Buffalo Creek, near Espero, in the Transition Zone, at an altitude of 7500 feet. The owners of the latter nests were well known to the ranchers of the vicinity. Also, several Ospreys were observed at the same place by the author during mid-June and mid-July, 1933.

Actitis macularia. Spotted Sandpiper. The status of the Spotted Sandpiper as a breeding bird of Arizona apparently rests upon the statement of Mearns (Auk, 7, 1890, p. 52). The birds were "apparently breeding" at a lake which, from the description, must have been Walker Lake, at the west base of San Francisco Mountain. Conditions at Walker Lake have changed little since Mearns' day, and the Spotted Sandpiper does not breed there now, as the writer has visited this lake frequently during the past few years without finding it. Mearns' belief was probably based on the presence of June migrants, as is almost certainly the case with his record of the White-crowned Sparrow on Hart Prairie near-by. Mearns further stated that this species bred in the low valleys of Arizona, but he gave no specific data as to location or date, thus leaving no satisfactory breeding records for the state.

The writer found several Spotted Sandpipers at ponds on the Kaibab Plateau between 7500 and 8500 feet, during the last days of June, 1931, but obtained no evidence of breeding at that time. On June 12, 1933, however, at White River Agency, Navajo County, in the Upper Sonoran Zone at an altitude of 5000 feet, he found two families of young barely able to fly. Three days later on Buffalo Creek, near Espero, in the Transition Zone at an altitude of 7500 feet, an adult Spotted Sandpiper was found with young. The latter were able to fly only a few feet. At this time adults were observed regularly on the nearby Black River and its tributaries. On June 15 and 16, 1933, a family of young already on the wing was seen at a represo near Phelps Ranger Station, at the north base of Mt. Thomas, White Moun-

tains, Apache County, in the Canadian Zone at an altitude of 9200 feet. On July 14, the writer again visited Buffalo Creek near Espero and found presumably the same family of young flying along the creek.

On August 5, 1933, Allan R. Phillips, also associated with the Museum of Northern Arizona, found a family of four young anxiously escorted by both parents. This observation was made on the south shore of Mormon Lake, Coconino County, in the Transition Zone, altitude 6950 feet. The young could fly only a few feet and thus barely escaped capture. These records establish the Spotted Sandpiper as a summer resident in the higher portions of Arizona.

Picoides tridactylus dorsalis. Alpine Three-toed Woodpecker. The following observations supplement the records of Mearns (Auk, 7, 1890, p. 252), who considered this bird to breed commonly throughout the pine belt of north-central Arizona. He mentioned only one specific nest, from the northwest slope of the San Francisco Mountains, June 8, 1887. During the past six years, 1928-1933, these woodpeckers have been observed throughout the summer months in the higher portions of the Canadian Zone and lower Hudsonian Zone, from 9000 to 10,000 feet, San Francisco Mountains.

On June 30, 1931, the writer discovered a nest in Dog Canyon, six miles east of V. T. Park, near the east rim of the Grand Canyon, Kaibab Plateau, in the Canadian Zone at an altitude of 8200 feet. The continual chattering of the parents betrayed their nest. Investigation disclosed a hole in an aspen tree, two and one-half inches in diameter, opening to the southeast, twelve feet from the ground. The cavity was eight inches deep and the nest was lined with a thick layer of maggot-infested sawdust. In spite of the crawling competitors, the nestlings, a male and a female, seemed quite contented. They were removed, banded, and photographed in a natural position nearby. The orange crown of the young male contrasted strikingly with the rest of his head. The parents continued chattering and scolding long after their offspring were returned but apparently soon forgot the incident, for the following day they were contentedly feeding the young. Several days later, another nest was found at Cougar Lake, also on the Plateau, about midway between Dry Park and the Castle Canyon Road, in the Transition Zone, at an altitude of 8100 feet. It was impossible to photograph this second group since the nest was in a hole about sixty feet above the ground in a western yellow pine. Throughout the higher portions of the Kaibab Plateau these woodpeckers were not uncommonly seen by the writer during the latter part of June and early July, 1931, and again at the end of July, 1933.

Several Alpine Three-toed Woodpeckers were also observed in the higher parts of the Transition Zone and in the Canadian Zone of the White Mountains, during mid-June and mid-July, 1933. A specimen collected July 14, 1933, no. 3920, is in the Museum of Northern Arizona. On June 15, 1933, on Home Creek, a tributary of Black River eight miles west of Espero, in the Canadian Zone, at an altitude of 8400 feet, a female Alpine Three-toed Woodpecker chattered continually and acted exactly as had the former one on the Kaibab Plateau when its nest was discoverd two years previously. As the time was limited, no nest was found, although the impression was gained that this woodpecker nests in the vicinity of the White Mountains of Arizona. It would thus seem that the Alpine Three-toed Woodpecker is a less rare summer resident on the higher portions of the plateau of central and northern Arizona than formerly was believed.

Empidonax wrightii. Wright Flycatcher. On the west slope of the San Francisco Peaks, lies Hart Prairie, a large sloping meadow with a little stream bordered by mountain willows and wild gooseberries. This meadow is in the Canadian Zone at an average altitude of 8600 feet. Here, early in June, 1932, Wright Flycatchers were quite common. Three nests were discovered by the author and Allan R. Phillips, and specimens were secured. The specimens, M. N. A. nos. 3917-3919 inclusive, have been examined by Dr. J. Grinnell of the Museum of Vertebrate Zoology.

The first nest was found June 7 when the birds were building. On the 14th, the nest contained 1 egg; on the 15th, 2 eggs; and from the 17th to the last visit on June 19, there were 3 eggs. One nest minutely examined was found to consist of thin strips of aspen bark and toilet paper.

This appears to be the first definite breeding record of the Wright Flycatcher for Arizona. Dr. Alden Miller (Condor, 34, 1932, p. 97) secured evidence of breeding of this species on the Kaibab Plateau but found no nests. Henshaw (Rep. Orn. Spec.,

Wheeler Surv., 1874, p. 161) found *"Empidonax obscurus"* not uncommon in summer in the aspen groves of presumably the White Mountains. This species probably breeds in Arizona in the White and San Francisco mountains and on the Kaibab Plateau.

Nuttallornis borealis. Olive-sided Flycatcher. There is apparently no satisfactory statement of the breeding status of the Olive-sided Flycatcher in Arizona since 1890 when Mearns designated it as a common summer resident in the White Mountains, Mogollon Mountains, and San Francisco Mountains, "nesting near the tops of the tallest firs and balsams" (Auk, 7, 1890, p. 256). No nests have been found in New Mexico (F. M. Bailey, Birds of New Mexico, 1928, pp. 445-446). The following observations are therefore offered to substantiate those of Dr. Mearns.

A nest was found July 1, 1931, by the writer and Clifton M. Greenhalgh, in the Canadian Zone of Dog Canyon at an altitude of 8250 feet, near the east rim of the Grand Canyon, Kaibab Plateau. The nest was about seventy feet up in an Engelmann spruce and contained three young birds with eyes not yet open. The framework of the nest was of twigs and needles of the western yellow pine. The nest, two and one-half inches in diameter and one inch deep, was lined with grasses and roots, and was saddled on top of one of the highest east-facing branches of the spruce, about two and one-half feet from the trunk. The parents were quite demonstrative and darted about threateningly. A climbing belt was used, and the young were photographed in the nest. Another nest containing two eggs was discovered the afternoon of the same day on the Plateau near V. T. Ranger Station, De Motte Park, altitude 8800 feet. A third egg had previously been broken in the nest. The eggs were lilac in ground color, one slightly darker than the others. Both had dark and light brown spots near the larger ends. This nest was practically the same as the former, except that it was lined with green lichens and rootlets. It also was placed on the top of a southeast-facing branch, about forty feet up in an Engelmann spruce, but five feet from the trunk. The nest and eggs were taken and are now M. N. A. no. 3921. Both parents were seen in the vicinity of the nest thereafter until we left the Kaibab, July 9, 1931 (Jenks, Grand Canyon Nature Notes, 5, no. 10, 1931, pp. 104-105). On August 1, 1933, an adult bird was observed at the very site of the earlier nest. These flycatchers were found to be not uncommon on the higher portions of the Kaibab Plateau at the end of July, 1933. Parents were seen carrying food to young in the nest at Dry Park, Kaibab Plateau, Transition Zone, as late as August 1, 1933. During the past six years, 1928-1933, the writer has found the Olive-sided Flycatcher to be a fairly common summer resident in the Canadian and Hudsonian zones of the San Francisco Peaks, from altitudes of 8300 to 10,500 feet. In several instances parents have been seen escorting young out of the nest as early as the middle of July.

Olive-sided Flycatchers were not uncommon in the higher parts of the Transition Zone, and in the Canadian and Hudsonian zones of the White Mountains, but were more numerous in the Canadian Zone in mid-June and mid-July of 1933. They were seen as high as 10,000 feet on Mt. Thomas on June 10, 1933. Near Brentwood Ranch, six miles west of Espero, in the Transition Zone at an altitude of 7800 feet, parents were carrying food to young already out of the nest on July 16, 1933. This species has also been observed at intervals during the past six summers on the higher portions of the Mogollon Plateau.

The above records, with the exception of those from the Kaibab Plateau, indicate that the Olive-sided Flycatcher still retains the same status which Dr. Mearns gave it in 1890.

Regulus satrapa olivaceus. Western Golden-crowned Kinglet. There appears to be no accepted published record of the Western Golden-crowned Kinglet in Arizona in summer, although Rhoads (Proc. Acad. Nat. Sci. Phila., 44, 1892, p. 125) reports having seen this bird in the Santa Catalina Mountains of southern Arizona in July. On July 15, 1933, the writer saw a flock of approximately twenty birds in a grove of Douglas firs at Reservation Ranch near the southeast base of Mt. Thomas, White Mountains, at an altitude of 9100 feet. Attention was attracted by the continuous high lisping notes of the birds. This observation was made during a heavy hailstorm and all the birds that were observed closely were young of the year, which could not have been long out of the nest. Two young were taken and have been examined by Dr. Grinnell. These specimens are M. N. A. nos. 3915 and 3916. This record establishes the Western Golden-crowned Kinglet as a summer resident of Arizona.

Oberholseria chlorura. Green-tailed Towhee. There is apparently no satisfac-

tory statement of the status of the Green-tailed Towhee in northern Arizona. Swarth considers this bird as "a common migrant, occurring indifferently on boreal mountain tops or on the semi-arid desert plains," but mentions no summer records for Arizona (Pacific Coast Avifauna, no. 10, 1914, p. 59). Dr. Merriam, however, suggested its possible breeding near San Francisco Mountain, "where an immature bird was shot in the pines August 5" (North American Fauna, no. 3, 1890, p. 97).

During the past six summers, the Green-tailed Towhee has been observed as a fairly common summer resident in the Canadian and the Hudsonian zones on the San Francisco Mountains. These birds inhabit the mountain willow and wild gooseberry thickets on the borders of alpine meadows, from altitudes of 8300 up to 10,500 feet. The writer has seen these birds in the mountains from April 3 until late in September. They may have arrived earlier and departed later, however, because the higher altitudes of the San Francisco Mountains were not studied before or after the given dates. Parent birds have been observed carrying food for young as late as August 11. There are numerous breeding records of the Green-tailed Towhee from the mountains of New Mexico, chiefly above 7800 feet, especially in the northern part of that state (F. M. Bailey, Birds of New Mexico, 1928, pp. 708-709).—RANDOLPH JENKS, *Museum of Northern Arizona, Flagstaff, Arizona, September 15, 1933.*

A Second Record of the Black Merlin in Southern California.—In the collection of the Museum d'Histoire Naturelle in Paris there is a specimen of *Falco columbarius suckleyi*, taken at Santa Barbara on October 28, 1878, by a collector named de Cessac. It is numbered 1880—1251 of the old catalogue and is not marked as to sex. However, it appears to be a fully adult female.

In an effort to locate other California specimens of note I spent some time in going over portions of the catalogue but discovered little beyond evidence that de Cessac and Pinart had collected extensively in central and southern California in the late seventies, and had sent to the Paris Museum nearly 3000 skins. Unfortunately, what was probably a valuable collection has been rendered virtually worthless through the removal, in almost all instances, of the original tags and the substitution of others which seldom bear more than a very unsatisfactory "Californie". In a few cases the original labels were still attached to the skins, some of the localities being "Vallee Tujo", Santa Barbara, Los Angeles, and several points in the San Francisco Bay region.—A. J. VAN ROSSEM, *California Institute of Technology, Pasadena, California, February 21, 1934.*

Apparent Promiscuity in the Violet-green Swallow.—In June, 1933, Violet-green Swallows (*Tachycineta thalassina lepida*) were abundant in the vicinity of Laguna Hanson, Sierra Juarez, Baja California, Mexico. On the morning of the tenth, the following incident was observed. A single bird alighted upon a small pine branch on the ground, and was quickly surrounded by four others. These later arrivals engaged in a general melee of quarreling and fighting among themselves, from which the bird on the branch remained aloof. In the midst of the flurry, a sixth bird arrived, alighted upon the back of the first bird and completed the act of copulation. All six swallows then took wing and, ascending above the pines, were soon lost to sight. Literature examined gives no record of the marital relations of these birds and so implies monogamy. The above would suggest that at times Violet-green Swallows may be promiscuous in their sexual activities.—FRANK F. GANDER, *San Diego Society of Natural History, San Diego, California, April 7, 1934.*

Notes on Food Habits of Juncos.—In a study of seedling survival at the Priest River Forest Experiment Station in northern Idaho, the seeds of six coniferous species were sown in the fall of 1932. Soon after the seedbeds were uncovered, early in May, 1933, juncos (thought to be *Junco hyemalis connectens*) were observed to be active about them. The following observations were made:

In order of preference, the seeds were: Western white pine, *Pinus monticola*; Douglas fir, *Pseudotsuga taxifolia*; western larch, *Larix occidentalis*; lowland white fir, *Abies grandis*; western hemlock, *Tsuga heterophylla*; western red cedar, *Thuja plicata*. Apparently the birds did not disturb the seeds of the last three species, which might be attributed to the smallness of the cedar and hemlock and to the bitter, resinous flavor of the white fir, although the white fir was the largest of

any seed planted, and was planted in such quantity that there were numbers of seeds on the surface. Except for the cedar seed, which tastes something like bran, and the white fir, seeds of the other species are agreeable to the human palate.

From the appearance of the nipped cotyledons of some young white pine and Douglas fir seedlings, it was surmised that the juncos had picked off the attached seeds which still contained some nutrient matter.

The juncos were active only in cutover and in partly cutover areas. Apparently they never penetrated to the nearby seedbeds in the dense virgin timber. In other words, their activities were confined strictly to open, somewhat brushy habitats.

The birds took seeds from all surfaces: duff (the layer of litter which covers the soil under the forest, in this case 1 to 2 inches thick and composed of dead leaves and twigs of the six tree species mentioned above), mineral soil, and burnt mineral soil; but they scratched for seeds below the surface only on those beds covered with duff. They never scratched in a mineral soil bed, although there was invariably a wealth of seeds less than a quarter of an inch below the surface.

The certainty with which the birds flew from the northwest corner of one seed bed to the northwest corner of another (the white pine blocks were in the northwest corner of the beds), without any intermediate stops or hesitation, indicated a surprisingly exact memory for places.

The last two observations throw some light on the nature of the juncos' intelligence. Apparently it functions expertly within the limits of ordinary circumstances, as illustrated by their returning so accurately to the food source, and scratching among leaf-litter. Such stimuli and reactions are within the realm of the birds' experience. But when extraordinary conditions obtain—and the presence of forest seed buried in exposed soil is probably extraordinary, compared to its common presence on the soil surface or buried in the duff—their intelligence does not turn those conditions to advantage.

Moreover, that they did not show any interest in the soil surfaces after the surface seed had been picked off (although they returned for the attached seeds once the seedlings had broken ground), makes it seem probable that juncos do not detect such seed by smell, but by sight alone.—LINCOLN ELLISON, *United States Forest Service, Washington, D. C., March 28, 1934.*

Sea Gull Lives Again.—The following item was given to me by my nephew, Lieut. B. W. Decker, of the U. S. Navy. As physicians tell me the dosage of adrenaline mentioned is about all an adult man could stand, the facts, as relating to a bird, may perhaps be of interest.

"Adrenaline returned to life a Western Gull which had fallen to the steel deck of the U. S. S. Wasmuth, steaming at 15 knots off San Diego, California, in February, 1934. The accident happened when the gull collided with the ship's rigging, or was rendered unconscious by the electrical discharge from the radio antenna. The bird was apparently dead, as it was lying on its back, with no perceptible motion. Its circulation had stopped, as shown by the colorless feet.

"L. R. Shockley, Chief Pharmacist's Mate of the destroyer, prepared a hypodermic, using epinephrine hydrochloride (adrenaline) 1/1000. He administered a subcutaneous injection about the breast, using one cubic centimeter. This was done at least five minutes after the bird had fallen to the deck. The color returned to the gull's feet, making them light pink. Shortly it opened its eyes and rolled over on its breast. Thirty minutes later a second injection caused the bird to flutter a wing and stand up, reeling as if intoxicated with no sense of balance. About a half hour after the second injection a third was administered, bringing the total amount injected to three cubic centimeters. After this the bird appeared to be dazed, but steady on its feet and capable of motion. It was then discovered that it was totally blind in the right eye—probably the cause of its colliding with the ship.

"The men in the crowd about the 'patient' approached and stroked its head and back, but when the ship's doctor, who gave one of the injections, attempted to touch it the bird retreated slowly. Two hours after the accident the bird was capable of walking, but was not interested in food or water. At this time it demonstrated its

contempt for the cleanliness of the deck and consequently the disgusted boatswain's mate 'gave it the air.' It fluttered or glided a hundred feet and alighted easily on the water where it remained as the ship steamed away."—ALBERT M. INGERSOLL, *San Diego Society of Natural History, San Diego, California, March 30, 1934.*

The Little Blue Heron in California.—During the winter of 1931 I saw at Point Mugu in Ventura County a small white heron which, I was satisfied, had greenish legs instead of black. Contact with Little Blue Herons (*Florida caerulea*) in El Salvador and coastal Mexico made me at once suspect this bird of being a young specimen of that species. A similar bird was observed by my colleague, Dr. R. B. Cowles, during the following winter. He was also satisfied that the color of the legs was greenish yellow. On January 2 of the current year, I saw such a specimen with greenish legs and dark areas upon the dorsal surface. The distance was such that the field glass could not map out the darker areas nor distinguish them from adventitious stains, though white herons are seldom soiled in any way.

On February 1, two of these birds were watched for nearly an hour at a distance of forty yards. There were no dark areas on the dorsum, but the legs were greenish yellow without a shadow of doubt, and the beaks yellow at the base. Young specimens of *Florida* may be immaculately white in plumage, there may be diffuse pigment, or there may later appear entirely blue feathers in sharp contrast to the white. In the series of *Florida* at the Los Angeles Museum, all three types are represented. The birds observed on February 1 were perfect representatives of the pure white phase. The species occurs regularly on the west coast of Lower California, and I feel confident that it commonly drifts northward to our own southern coast marshes where it has been assigned by many observers to the category of Snowy Egret (*Egretta thula*).—LOYE MILLER, *University of California at Los Angeles, February 17, 1934.*

Spring Notes from Mount Pinos, Kern County, California.—Having noted the scarcity of published definite dates of arrival or departure of some common southern Californian birds, the writer submits the following from the Kern County side of Mount Pinos.

Ixoreus naevius meruloides. Northern Varied Thrush. Common through March and early April from 6000 to 7000 feet altitude. Five or six birds seen (one collected) by Ora A. Willett April 15.

Passerella iliaca stephensi. Stephens Fox Sparrow. Fairly common in ceanothus patches at about 7000 feet altitude by April 8. Specimens collected April 14.

Psaltriparus minimus minimus. Coast Bush-tit. Adult male collected by Ora A. Willett on brushy mountain side at 7000 feet altitude April 15, 1934. An unusually high altitude for spring.—G. WILLETT, *Los Angeles Museum, Los Angeles, California, April 27, 1934.*

Nuttall Poor-will on the Oregon Coast.—On October 27, 1933, a small boy shot a poor-will at a beach resort near the mouth of the bay at Netarts, Tillamook County, Oregon. It was nearly a week later that the bird came into my hands through the kindness of Mr. Clarence Edner of Netarts, and though by that time in very poor condition it was nevertheless preserved as a study skin (field number 9337). It proved to be a young female. Dr. Joseph Grinnell identified the specimen as *Phalaenoptilus nuttallii nuttallii*,—"in other words the race of the Great Basin and Rocky Mountain region," and he further remarks "it is thus hard to imagine how so young a bird (outer primaries not yet fully emerged) could have gotten so far from the breeding ground of that race—unless its parents had themselves been pioneers far to the westward across the Cascades." So far as I know, the poor-will has not previously been noted in this part of the state.—ALEX. WALKER, *Tillamook, Oregon, March 25, 1934.*

Goose Footprints on a Pliocene Mud-flat.—Upon a ripple marked mud-flat a goose of ancient times left record of its ramblings. Soon the impressions of its feet were buried and later cast in the forming shale and sandstone. Today the old mud-flat, that once was part of river delta or lake shore, stands at a steep angle in a road cut at Saint Mary's College, Moraga Valley, Contra Costa County, California. Spread

across part of this rock surface the goose tracks were clearly visible when the layer of rock was first exposed. Mr. Hugo Goeriz and one of the present writers (Ashley) found and inspected them in November of 1933. The two of us were later able to remove successfully two of the tracks and take measurements upon the cliff of two others (fig. 29). At the time of discovery there were about ten recognizable impres-

Fig. 29. Right footprint of a goose, from Pliocene formation, Moraga Valley, California. About 2/5 natural size. Heel is toward the bottom.

sions. Most of the footprints left upon the cliff have by now weathered away. The slabs containing the two tracks that were removed are in the collection of the Museum of Paleontology of the University of California.

Mr. R. A. Stirton of the Museum of Paleontology has kindly furnished information regarding the exposure. He says the formation is Lower Pliocene, probably Orindan or Siestan. Its more precise location is in township 1 south, range 2 west; SW¼ of NE¼ of section 17; east side of Las Trampas Creek. Numerous undetermined fish remains have been taken from the beds.

It is of course impossible to identify the tracks even to the genus. That they were made by geese, however, seems certain. Proportions of toe, claw, heel pad and web impressions all check closely with the feet of modern geese of the genera *Branta*, *Chen* and *Anser*. The middle (third) toe impression, measured from the heel pad to the base of the claw, varied from 85 to 90 mm. Average toe lengths of the three best specimens were: middle toe, 89.3 mm.; inner toe, 73.0; outer toe, 80.3. Comparable measurements of feet of the Tule White-fronted Goose (*Anser albifrons gambeli*) are: 88.4, 73.0 and 81.5. In a study of the hind limb of geese being carried on by one of us (Miller) no differences in proportionate length of toes have been found that are large enough to be useful in this connection. The fact that we have matched the size of the tracks with the feet of White-fronted Geese does not indicate that the impressions could not have been made by Canada or Snow geese of comparable size.

Pliocene records of geese in North America number five, exclusive of this record; all are from the western United States. Four have been named as extinct species. Of these, *Branta howardae* and *Branta esmeralda* are the only ones of size comparable to the bird that made the tracks at Moraga. The paucity of North American Pliocene bird fossils is such that the six records of geese from this period constitute a fairly impressive representation.—ALDEN H. MILLER and JAMES F. ASHLEY, *Museum of Vertebrate Zoology, Berkeley, California, April 20, 1934.*

Arizona Records of the Thick-billed Parrot.—Since the extinction of the Carolina and Louisiana paroquets leaves the continental United States without any native species of the order of parrots save sporadic visitors from Mexico, a peculiar interest attaches to the occurrence of the Thick-billed Parrot (*Rhynchopsitta pachyryncha*) within our borders. As I have some data on an important unrecorded occurrence of the species it seems desirable to sum up the known facts.

Swarth's List (Pacific Coast Avifauna, no. 10, p. 32, says, "Status—known only as an irregular, occasionally abundant, mid-summer visitant to the Chiricahua Mountains," and cites Lusk and Smith.

R. D. Lusk (Condor, 2, 1900, p. 129) reported that "about the middle of June" (1900) a small flight of 9 or 10 of these birds appeared in the Chiricahua Mountains. They were soon attacked by pole-cutters in a lumber camp, and two were collected by the recorder of the occurrence, only a remnant of the little band being presumed to have escaped. Stomachs of these birds contained only immature pinyon nuts wrested from the hard, green cones. Beaks and bellies were besmeared with pine resin.

A. P. Smith in 1907 (Condor, 9, 1907, p. 104) reported upon the occurrence of a large flock of Thick-billed Parrots in the Chiricahua Mountains in August, 1904. This time there was a large flock "estimated at from 700 to 1000," which remained four days, and was noted to be feeding on pinyon nuts. Seven were killed by one man, and several more by other men. This author inclined to the belief that "*Rhynchopsitta pachyrhyncha* may be looked for every few years or so, and is not nearly as casual as supposed." This prediction of a quarter century ago seems not borne out by available data.

The next occurrence of these parrots, and the last of definite record, extended through the *winter* of 1917-18. I first heard of these birds in the spring of 1918, and finally in May of that year I found an opportunity to visit Pinery Canyon in the hope of seeing them.

I was disappointed to learn that the birds had not been seen for some time. However, my disappointment was somewhat tempered by the pleasure of making the acquaintance of the Hands brothers, with one of whom I had previously corresponded about the parrots, and also by an opportunity to see a living specimen of the Thick-billed Parrot. This individual had been slightly crippled and captured and was a pet in the home of a resident of Pinery Canyon. I was unable to secure the bird for the University, but later its owner sent word of her regret that she had not let us have it, as it had escaped from her.

Under date of April 7, 1918, Mr. Percy Hands wrote me as follows concerning the 1917-18 incursion of parrots.

"The Mexican Thick-billed Parrots were first noticed on my ranch in lower Pinery Canyon in mid-September. About 250—counted over 200—in one flock. They have been on my ranch at irregular intervals since then up to March 27. They roosted here seven times during late October and early November. The longest period they were away was about three weeks before they appeared March 27. There were about 70, rough count, at that appearance. Three were shot at that time and sent to the Biological Survey, Washington.

"October 2 and 3 there were large numbers at Monte Vista and Rucker Canyon. My ranch is the farthest north they go on the west side of the Chiricahuas and Upper Wood Canyon on the east side. These points are practically the northerly limits of the large timber upon the forest."

Neither did they remain in winter in 1900, which occurrence of the species was apparently unknown to Mr. Hands. This is not surprising in view of the small number and their early massacre and retreat. In the Report of the National Zoological Park for the fiscal year 1918 (Ann. Rept. Smith. Inst. for 1918, pp. 66-81) is recorded the acquisition by purchase of a pair of Thick-billed Parrots from Arizona. These birds were secured "in January in the pine-forested Chiricahuas, when the ground in the higher altitudes where the birds occur was covered with snow." Evidently these were from the flock observed by Mr. Hands.

Since 1918 I have constantly hoped for a reinvasion of these interesting parrots, and have by recommendations to state game wardens arranged for better protection for the birds (should they reappear) in so far as regulations may give protection. Now, after fifteen years with no report of their reappearance, it seems best to record

what is known to date. In preparation for this note I wrote Mr. F. H. Hands concerning any possible recent occurrences. He replies that he has no personal knowledge of their occurring since 1917-18, but that a number of summers ago he "heard an unconfirmed rumor that a few were on top of the mountains, but it wasn't allowed to leak out in order to protect them." With this desire I can heartily sympathize.

The fourth edition of the A. O. U. Check-list gives the range of the Thick-billed Parrot as follows, "Mountains bordering the Mexican tableland, northward sporadically to the Chiricahua Mountains, Arizona, and casually to the *Dragoon, Galiuro, and Graham ranges*" (italics mine). I can find in the literature only suggestions that they *may* occur in ranges other than the Chiricahuas; including in other ranges the Huachucas. Yet I can find no *record* whatever of occurrence elsewhere than in the Chiricahuas.—CHARLES T. VORHIES, *University of Arizona, December 1, 1933.*

NOTES AND NEWS

The annual meeting of the American Ornithologists' Union will be held this year in Chicago during the week beginning October 22. Headquarters will be at the Field Museum of Natural History where Dr. Wilfred H. Osgood will receive the Union as Chairman of the Local Committee. Dr. Osgood was the first President of the Cooper Ornithological Club, back in '93; and for this reason as well as others C. O. C. members will be warmly inclined to attend this Chicago meeting. A large general attendance from the West is likely also because the Century of Progress Exposition will still be open, with attractive railroad rates available. This factor will appeal especially to bird students in California, whence there should be a good-sized delegation. Further information can be obtained from Dr. Osgood, addressed as above, concerning this, the most important ornithological event of the year in America.—J.G.

At a recent meeting of the Board of Directors of the National Association of Audubon Societies the following statement of policies with relation to the protection of hawks and owls was approved. We are confident that well-nigh every member of the Cooper Ornithological Club will find himself ready to endorse this admirable statement in all its sections and will thenceforth be ready at every opportunity to aid the Audubon Societies in carrying out their aim, as here expressed, to save these commonly misunder-

Fig. 30. Clinton G. Abbott, Director, Natural History Museum, San Diego, and President, Southern Division of the Cooper Ornithological Club.

stood birds from further depletion and even, some of them, from extinction.

"1. We oppose the extermination of any species of bird; in this we include all hawks and owls without exception. 2. We advocate protection, under all conditions, of rare hawks, such as the Duck Hawk, and of beneficial hawks and owls, such as the Broad-winged Hawk and the Barn Owl. 3. We oppose the killing of hawks and owls other than those individual birds known to be damaging property. 4. We condemn bounties, hawk campaigns and general hawk shoots because—First: They result in indiscriminate killing, without regard to merit, because great numbers of hunters are not qualified to tell one species of hawk or owl from another. Second: They put many hunters in the field outside the regular shooting season, making law enforcement more difficult. Third: If control is needed, such work should be conducted only by properly qualified authorities. 5. We are opposed to the pole-trap because it is cruel and indiscriminate. 6. We aim: *a*, Through educational methods to create greater popular appreciation of the esthetic, scientific and economic value of hawks and owls; *b*, to combat the constant propaganda which encourages their destruction; *c*, to work for the enactment and enforcement of laws giving them adequate protection."—J.G.

MINUTES OF COOPER CLUB MEETINGS

NORTHERN DIVISION

MARCH.—The March meeting of the Northern Division of the Cooper Ornithological Club was held on March 22, 1934, at 8:00 p. m. in Room 2003, Life Sciences Building, Berkeley, with Vice-president Miller in the Chair and sixty-five members and guests present. Minutes of the Northern Division for February were read and approved. Minutes of the Stanford Chapter for February and March were read. Minutes of the Southern Division for February were read by title only.

The following applications for membership were received: Walter W. Bennett, Arnolds Park, Iowa, proposed by J. Grinnell; Miss Elsa Dresbach, 1238 Cowper St., Palo Alto, Calif., by C. B. Lastreto; J. Stanley Brode, 215 N. Blaine St., Pendleton, Oregon, and Donald M. Hatfield, 2504 Etna St., Berkeley, Calif., by J. M. Linsdale; Mrs. Anna R. Einarsson, 699 Santa Barbara Rd., Berkeley, Calif., Mrs. Antoinette B. Hillebrand, 1400 Hawthorne Terrace, Berkeley, Calif., and Mrs. Kenneth Saunders, High Acres, Berkeley, Calif., by Amelia S. Allen; Mrs. Albert B. Stephens, 1695 Filbert St., San Francisco, Calif., by Cornelia C. Pringle; Wilbur V. Henry, Route 1, Box 381, Los Altos, Calif., by Clare McGee; Mrs. Allace M. Rigden, 424 Harriet Ave., Palo Alto, Calif., by Isabel M. McCracken.

Notes on the arrival of the Western Warbling Vireo were contributed by Alden Miller who reported hearing the song on March 15 near the President's house on the Campus, by Mrs. Mead who saw a pair of the birds on Etna St., March 18, and by Miss Albro who heard one of these vireos singing in Faculty Glade on March 22. Beverly Blanks first noted the Rufous Hummingbird on March 10. Lutescent Warblers were reported seen or heard in the East Bay region on March 4, 8 and 18.

The evening's program was given by three of the nine contestants whose names are entered in the program contest sponsored by the Northern Division and was as follows: "A Trip to the Farallon Islands," Clarence F. Smith; "Effects of Weather upon Migration of Birds," Howard H. Twining; "Observations on Birds of High Altitudes," H. Beverly Blanks. Announcement was made that the second group of three papers would be given at the April meeting of the Northern Division, and the third and last group at the May meeting.

Adjourned.—HILDA W. GRINNELL, *Secretary*.

APRIL.—The regular monthly meeting of the Northern Division of the Cooper Ornithological Club was held at 8:00 p. m., Thursday, April 26, 1934, in Room 2003, Life Sciences Building, Berkeley, with Vice-president Miller in the Chair and about seventy-five members and guests present. Minutes of the Northern Division for March were read, corrected and approved. Minutes of the Southern Division for March and of the Stanford Chapter for April were read.

Applications for membership were: Emmet T. Hooper, Museum of Vertebrate Zoology, University of California, Berkeley, by Jean M. Linsdale, and Joseph H. Wales, Natural History Museum, Stanford University, Calif., by Clare McGee. The secretary read a letter from Miss Baldwin, secretary of the Stanford Chapter, suggesting that the Northern Division cooperate with it in endorsing the application made by Mr. Bixby, City Engineer of Palo Alto to the State Division of Fish and Game to have 1000 acres along the Bay shore declared a State Game Refuge. The Chair requested discussion from the floor, which was participated in by Mr. Tonkin, Mr. Cain, Miss Pringle, Miss McGee and Mr. Parmenter. Mr. S. C. Brooks made a motion that the Chair appoint a committee of three to investigate and report. The motion was duly seconded and Mr. Grinnell moved as an amendment that the matter be referred to the Northern Division's standing Committee on Conservation. The amendment was seconded and unanimously carried. The motion as amended was then unanimously carried, and the secretary instructed to place the matter in the hands of the Committee.

Mr. E. L. Sumner reported that on April 25 Miss Mary Erickson and he visited the Richmond area where Mr. Alden Miller discovered nesting Mockingbirds in 1931 and noted two adult birds and a nest containing at least two young ready to leave. Mr. Cain told of being with Mr. Emerson Stoner on April 22 at the Benicia Arsenal and locating a nest of mockingbirds in a quince tree near the arsenal. This is the first season that mockingbirds have been seen at Benicia by Mr. Stoner. The four young found in the nest were banded by the finders. Mr. Behle reported that he had been one of a group which visited the Farallon Islands on April 13. Many of the Double-crested Cormorants had young three or four weeks old. Most individuals of other species were not yet paired. Murres were estimated to number between two and three hundred. Many of the gulls seen looked ailing, and the light-house keeper thought the sickness epidemic. Mr. Dyer reported the presence of a California Road-runner in the vicinity of his home in Piedmont; the bird's song, by stop watch, was of four and one-half seconds duration and was audible at a distance of three hundred yards, although of apparently slender volume. Miss Clare McGee told of finding a Dusky Poor-will on the Mt. Tamalpais trail on April 22. In response to a question as to the presence of Western Robins in the East Bay area in summer, several members reported the birds as nesting regularly here of late years.

Speakers in the second of the contest programs were: Cranson L. Hopkins on "Random Observations on Barn Owls"; Raymond M. Gilmore on "Deep-water Sailors—the Slender-billed Shearwaters"; and Mrs. G. Earle Kelly on "Rock Decay and its Ornithological Significance." The speakers maintained the high standard of excellence set at the March meeting. Disapproval of proceedings was, however, vigorously registered by the two young Barn Owls, borrowed for the evening by Mr. Hopkins from one of the twenty nesting boxes which he has put up in country barns and which are all occupied.

Adjourned.—HILDA W. GRINNELL, *Secretary.*

SOUTHERN DIVISION

MARCH.—The regular monthly meeting of the Southern Division of the Cooper Ornithological Club was held at the Los Angeles Museum, Exposition Park, Los Angeles, on Tuesday, March 27, 1934, at 8 p. m. In the absence of President Abbott, the meeting was called to order by Vice-president Cowles with 18 members present. Minutes of the Southern Division for February were read and approved. Minutes of the Northern Division for February were read. The name of Olin Sewall Pettingill, Jr., Middletown, Massachusetts, was proposed for membership by John McB. Robertson.

A letter received from Henry B. Ward, permanent secretary of the A. A. A. S., announcing the summer meeting of the Association to be held this year in Berkeley, June 18 to 23, was read, as was also the letter from James Moffitt, Economic Biologist, Bureau of Education and Research, acknowledging receipt of the recommendation of the Cooper Club's committee on the present status of ducks and geese in California, which was sent to the Division of Fish and Game, at San Francisco.

Calling attention to the 9th Annual Meeting of the Cooper Club, to be held in San Diego, March 30 and 31, Mr. Chambers said he would like every one to attend that could and he spoke of Mr. Abbott's efforts to make the meeting a success and to give all members a good time.

Mr. Willett reported that several con-

servation organizations in southern California had received word from Washington that there had been a great many reports and recommendations sent in regarding the situation of ducks and other water fowl and methods to be taken with regard to their preservation, and it was suggested (from Washington) that efforts be made to hold a joint meeting of these different organizations and get them to agree on one program. Such a meeting was called in early March, with Mr. Willett and Mr. Pierce representing the Southern Division of the Cooper Club, and with representatives present from the Izaak Walton League, Sierra Club, Federation of Women's Clubs, Automobile Club of Southern California, Nature Club, the Audubon Society, and possibly others. The recommendations recently adopted by the Cooper Club were presented for discussion and were enthusiastically endorsed by those present to be sent on to Washington as the unit program for this section of California.

Because of a previous engagement which took Captain Knight and his trained eagle to South Africa, Mr. Pemberton regretted his inability to secure an evening's entertainment for Cooper Club members.

Mr. John McB. Robertson announced that the new roster of club members would appear in the May issue of The Condor and he asked that notice of any change or correction be sent to him promptly. A suggestion was made by Dr. Miller that the list of honorary members be also included, alphabetically, in the text.

Mr. Chambers reported that Avifauna 22, "Birds of Nunivak Island, Alaska," by Harry S. Swarth, would be off the press in a few days and ready for mailing.

Among field observations of interest were Western Bluebirds nesting in the Partins' yard at West Los Angeles; a partial albino Mockingbird seen at Buena Park having both sides of head pure white and with the white area in the wing about twice normal; two Golden Eagles found killed near Lucerne Valley; and varying comments on this winter's population of the Cedar Waxwing.

The death of Mr. Ruthven Deane of Chicago, a long-time member of the Cooper Club, was brought to the attention of the members present. On motion made by Dr. Miller, seconded by Mr. Pemberton, and duly carried, Mr. Harry Harris, because of his long acquaintance and warm friendship with the family, was authorized to write a letter to Mrs. Deane conveying the profound sympathy of the Southern Division of the Club.

Adjourned.—LAURA B. LAW, *Secretary.*

APRIL.—The regular monthly meeting of the Southern Division of the Cooper Ornithological Club was held out-of-doors at Pine Creek, Sespe Canyon, on Sunday, April 22, 1934, with Messrs. Laurence R. and Sidney B. Peyton acting as hosts.

The morning hours were given over to enjoying the beauty of the canyon, and to watching for and finally seeing the flight of Condors. Four of the huge California vultures were seen by some of the members, six by others.

In the early afternoon the meeting was called to order by President Abbott, with 55 members and guests present. Minutes of the Southern Division for March were read and approved. Applications for membership were presented, as follows: Mr. J. E. Crouch, San Diego State Teachers College, San Diego, California; Mrs. Scott Brown, 880 La Loma Road, Pasadena, California; Mrs. Lewis Osborne, 888 Armada Terrace, Point Loma, California; and Mr. Lewis Wayne Walker, 4169 Third Avenue, San Diego, California, by Mr. Clinton G. Abbott; Mrs. Albert Stephens, 4000 East 2nd Street, Long Beach, California, by W. Lee Chambers; Mr. Karl Walton Kenyon, 6001 Bellevue Avenue, La Jolla, California, by Mr. Laurence M. Huey; Dr. Guthrie R. Price, 409 Hillcrest Blvd., Monrovia, California, by Wright M. Pierce.

After discussion, the motion was made by Dr. Miller, seconded by Dr. Cowles, and duly carried, that the Northern Division be asked to represent the Southern Division of the Cooper Ornithological Club at the summer meeting of the A. A. A. S. to be held in Berkeley, California, June 18 to 23.

President Abbott spoke of his delight at having at last seen a California Condor in flight, and voiced the sentiment of all present in the appreciation and thanks which he extended to the Peyton family for their generous kindness and hospitality. The day was voted a grand success. Mr. Sidney Peyton suggested that the Southern Division make the April meeting in Sespe Canyon an annual affair. This suggestion was heartily approved but no direct action was taken.

Meeting adjourned.—LAURA B. LAW, *Secretary.*